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THE INTERNATIONAL AGRARIAN CRISIS

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The severe crisis from which German agriculture is suffering is by no means, as was long believed, confined to Germany. The entire temperate zone is in its grip; beyond central Europe, those great thinly-populated areas of extensive agriculture which supplied industrial Europe with grain and meat have felt it most. My task is to consider the agrarian crisis as one permeating international economic relations, to establish such of its characteristics as are common to all lands, and to search out their common sources. Not until we have determined the ultimate and decisive causes will we be in a position to apply proper remedial measures. I would not have ventured to write on this complicated subject but for the fact that the Agrarian and Land Settlement Research Institute which is under my direction has for more than a year past been occupied with studies designed to throw light on the origin and nature of the present agrarian crisis. My associates are men prominently connected with science and with the larger export fields, while as part of our investigation research tours were made to England and the Scandinavian countries. The reports have

[1] Professor Sering has long been prominent among students of agricultural economics in Europe. Nearly forty years ago he made an extended trip in America and published a volume dealing with the existing and future agricultural competition of North America as seen from the Continental viewpoint. The editor believes that readers of the JOURNAL OF FARM ECONOMICS will be deeply interested in the analysis which Professor Sering makes of the present situation.

The manuscript was submitted in the original, and the JOURNAL is deeply indebted to Miss A. R. Hasse of the Institute of Economics for the excellent translation presented here.—EDITOR.

not all come in; important ones, like that on British India are still expected. For that reason, the interpretation here set forth must be regarded as somewhat provisional.

1. *The Problem*

Since the close of the war, a wholly abnormal price structure has existed throughout the entire temperate zone, and this condition is the immediate general cause of the agrarian crisis. The gold prices of the more important staple crops are approximately at or near their pre-war level, while industrial prices have gone much higher. This has brought about great depression in agricultural profits or even, as in the case of Germany with her poorer soil, their total disappearance.

I have said this price structure was abnormal. For a standard, any pre-war period in any country may be selected. Chart 1 shows the price movement from 1870 to 1913 in Ger-

INDEX NUMBERS OF PRICE MOVEMENT OF RYE AND INDUSTRIAL RAW MATERIALS, GERMANY. 1870-1913
(Statistisches Reichsamt)

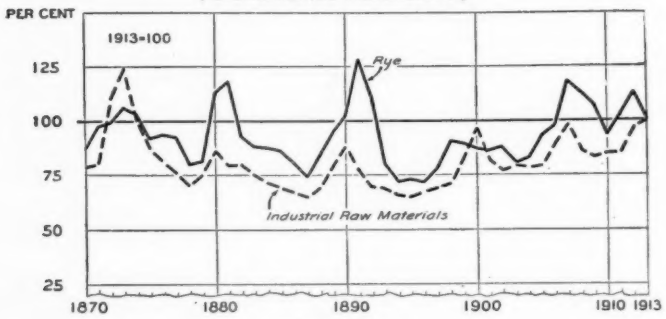

CHART 1

many of rye as her chief breadstuff and (the lower line) shows that of producers' goods, principally coal, iron, other metals, and a smaller percentage of skins, leather and textiles. It thus develops that (1) both price curves follow a parallel course. This is not surprising. All prices are interlocking. Industry and agriculture are dependent upon a mutual exchange of their products, and all trade receives

its primary direction from traffic between city and country, between industrial and agricultural communities. (2) The industrial curve remains consistently below the rye curve with the exception of two short periods of an industrial upswing. These facts have been ably supplemented by detailed studies made by an associate of Professor Aereboe, Dr. Gläsel,[2] on the disparity in price between agricultural products and the means of agricultural production. They show that this spread widened progressively in favor of agriculture during the decades preceding the war, so that the purchasing power of agricultural products had constantly risen. For instance, a cwt. of rye would bring 9 kg. of acid superphosphate in 1871, 13.1 kg. in 1890, 27 kg. in 1912; 4.7 kg. of Chile nitrate during 1876-80 and 6.8 kg. during 1911-12. The same is true, although singularly much less pronounced, of the kainit produced in Germany. A surprising correspondence in the reduction in the price of feedstuffs and farm machinery took place at the same time. In 1864, a horse-drawn plow made by Sack, Leipzig, could be bought for 18.80 cwt. of barley, in 1876 for 10.70 cwt. and in 1912 for 5.10 cwt.

I wish to emphasize that we are here concerned with phenomena operating according to laws and more especially natural laws. Thünen's "isolated state," with its centrally-located self-contained city, is called to mind. As its population increases, the increasing requirements in foodstuffs and raw materials can, *ceteris paribus*, be met only by increased expenditure of effort on the part of labor and of means of production. The cultivated area is etxended to the periphery, poor land is worked, cultivated land is more intensively worked; all these being measures requiring added energy output inasmuch as transport and agricultural technique have remained unchanged. If, then, prices for the staple products of the soil increase accordingly, this increase simply means that the city must now deliver larger amounts of industrial products for the same quantity of wheat, rye, etc., than formerly. The pressure of increasing population

[2] Gläsel. Die Entwickelung der Preise landwirtschaftlicher Producte und Productionsmittel während der letzten 50 Jahre. Dissertation. Berlin, 1917.

operates consistently to cause a widening of the price spread between industrial and agricultural products. Aereboe correctly points out that this spread determines the economically permissible productive intensity in agriculture.

The law of increasing purchasing power of agricultural produce is, then, only another expression of "the law of diminishing returns from land." It means that the increase in agricultural production either by expansion (utilization of poor land and land inaccessible to markets) or by intensive culture gives rise to increased costs. Given the possibility of unvarying conditions, the unavoidable consequence of increasing population would be a corresponding lowering of the standard of living. The law holds good only providing that agricultural and industrial technology remain stagnant. There are agricultural improvements, the effect of which is to increase gross profits without added actual expenditure in labor or goods for the profit-producing unit (green manuring, seed selection, etc.). Industrial improvements are more effective in this regard. For it is in the converting industries rather than in the arts that technology has a wider scope for the utilization of organic plant and animal substances. A growing scarcity of raw materials and of food stuffs and a corresponding price increase is therefore a spur to inventiveness. Inventiveness again reduces not only industrial production costs, but cost of quantity movement as well, and in the end ensures the production, through lowered farm machinery prices, and the movement, through lowered transport costs, of staple agricultural crops with a minimum of effort expended on any one crop unit. The law of diminishing soil return is then not suspended, but is rather compensated or even overcompensated.

Such have been the interrelations which have repeatedly brought about a balance between agricultural and industrial production, and which have made it possible to feed, and to raise the standard of requirements of an ever-growing population with no increase of economic effort. The question, therefore, is one of interrelations which have the utmost fundamental importance for the progress of civiliza-

tion. They have even been able temporarily to cause an excess of agricultural production beyond the requirements of a growing population. Globe encircling railways and lines of navigation, labor saving devices, and perfected implements of the farmer have made it possible for the greatest colonization of all time to cultivate the larger part of the temperate zone in the course of fifty years. We all remember the depression caused in European markets by the influx of cheaply produced and extensively cultivated agricultural products, which was the beginning of the first serious agrarian crisis. But in spite of the price decline, Germany's agricultural position remained such that it was possible for her not only to maintain intensiveness of planting but to increase it. Thanks to unusual technical progress, the prices of finished products declined below the level of those of farm products, the depression of which was moderated, but by no means halted, by the then existing import duties on grain.

The law governing the increase in the purchasing power of agricultural products was in force, even vigorously so, when, towards the close of the last century, the best land of the colonial possessions had been occupied, the rate of expansion had been retarded, and the rapidity of the population increment of the civilized world exceeded that with which cultivable areas could be worked. Prices of staple agricultural products rose to such levels that it became profitable to exploit areas which could be utilized only at extra cost, such as the arid lands of the United States and of Argentina.

Upon the outbreak of the war, the munitions requirements of the warring peoples naturally forced up the prices of manufactured goods. But the agricultural price curve outside of the blockaded Central Powers rose higher and more sharply as the U-boat war threatened England with famine. This stimulated an enormous expansion of agricultural exports. The United States and Canada became the granary of the Allies, while Argentina supplied the bulk of the meat requirements. Thus it was possible to bridge over the deficit from Russia and the Danube region. During the war

there was no contraction of the spread between prices of farm products and those of industrial goods.

Those abnormal phenomena to which reference was made in the beginning have taken place since the close of the war. The price relation has become reversed, and it is my task to find the causes therefor. However, the facts themselves must first be more definitely stated. I will confine myself to those countries in which the money price movement was comparatively not greatly dislocated, and will avail myself of the excellent statistics of the United States. This fact, however, must be taken into consideration, viz., that the price movement throughout the world of the commodities within the scope of this paper is uniform, any differences being conditioned by the varying status of *paper money*.

2. *The General Price Movement*

Chart 2 shows the general wholesale price movement from 1913 to 1924 in three countries in which the standard of value maintained approximate parity with gold, viz., the United States, England, and Sweden. The 1913 prices have

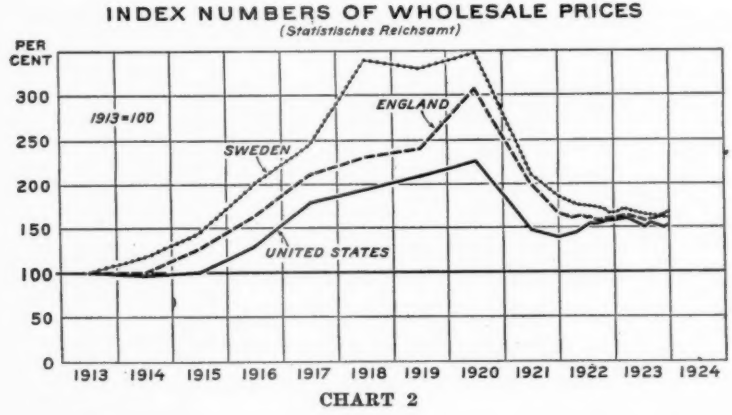

CHART 2

been used as a base. It is shown that the peak of the war curve occurred after the armistice, i. e., in 1919 and 1920. Prompted by the necessity of refilling the emptied goods markets, an already favorable situation was further en-

hanced by inflation of credit at the same time that the central banks were maintaining a lax discount policy.

The next chart, 3, shows that the price fluctuation from 1913 to 1923 could hardly have had anything to do with the amount of gold produced, nor that the definitive contraction in the value of gold to but 2/3 of the pre-war value could be ascribed to increased gold production. On the contrary, it was the high industrial prices and wages of the war and post-war periods which arrested the production of gold in the less favorable mining districts. The annual production fell from 700,000 kg. in 1910-13 to 500,000 kg. in 1920-23. At the same time, only a minimum amount of the reduced quantities available was being converted into circulating medium; it was disappearing in the bank vaults of Washington. For the war destroyed the old gold market with its sensitive mechanism, and burdened Europe with a heavy debt to the United States. The foreign trade and credit policy of the United States prevented the influx of goods. Instead of an import surplus, such as obtained in all creditor countries before the war, the United States, with the help of that policy and her superabundant productive capacity, has now, as before, an export surplus. So that, just as during 1915 and to the beginning of 1917, now again, since the beginning of 1920, enormous quantities of gold, in reality the larger part of the new gold production, have been coming into the United States. If this gold flowed freely into trade channels, then a new inflation and higher prices would ensue. Therefore the gold is carefully conserved. The gold reserve of the Federal Reserve system (June, 1924) amounts to not less than 82.5 per cent of the note circulation and deposits combined. An excessive and increasing gold supply thus underlies a diminished volume of the medium of exchange. This useless storage necessitates an annual expenditure which, for the year ended May, 1924, amounted to 2 1/3 milliards of gold marks (viz. interest on idle reserves: 160 million dollars and 401 million dollars of superfluous gold influx). In spite of this enormous effort it would not be possible to maintain the gold value indefinitely. With the central bank gradually losing control much

gold is finding its way through private banks into the open channels of trade. In order to avoid a new inflation a more flexible foreign trade policy must be adopted and the people must become accustomed to larger European investments. The first decisive step in this direction was the acceptance of the Dawes Plan.

Chart 3 also shows the general price movement in England, and the United States, the German price curve, converted from dollars into gold, being added. This shows how the stringent war-time measures and then the period of terrible

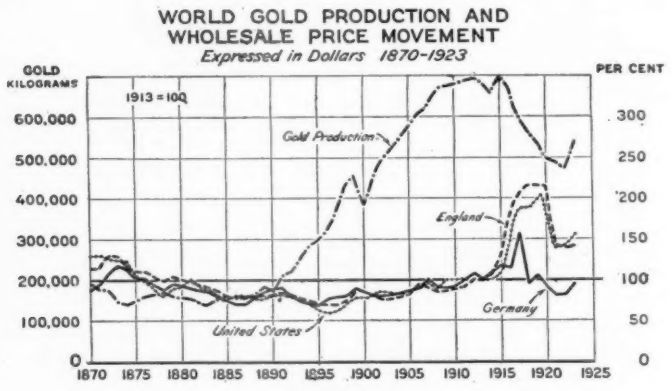

CHART 3

inflation kept prices expressed in gold, based as of 1913, far below the English and American level. Tendencies towards an adjustment with world market prices have become firmer only since the stabilization of the mark in November, 1923.

The general price movement has brought about tremendous shiftings in the distribution of wealth for the reason that it affected different groups in a totally different manner. The devaluation of money was particularly significant in the case of agriculture because of the resulting release from the debt burden. But for the question under consideration the general price movement is only of secondary importance. The condition of any one kind of business, as agriculture for instance, is not determined by the general but by the relative price movement. The workings of inflation, deflation

and devaluation have been frequently discussed and they are well understood, whereas almost no investigation has been made into the relative price movement. Money must be looked upon as a unit of computation which expresses the value relation of the various commodity groups to each other. The farmers' condition depends upon the quantity of non-agricultural goods which their money income can provide.

3. *The Relative Price Movement and Components*

Chart 4 shows the development of prices paid to producers of farm products and the prices of 20 industrial stocks, according to price tables issued by Cornell University. The industrial curve makes clearly perceptible the very profitable business of the entrepreneurs in the days of neutrality and of the huge deliveries of munitions to the European scene of

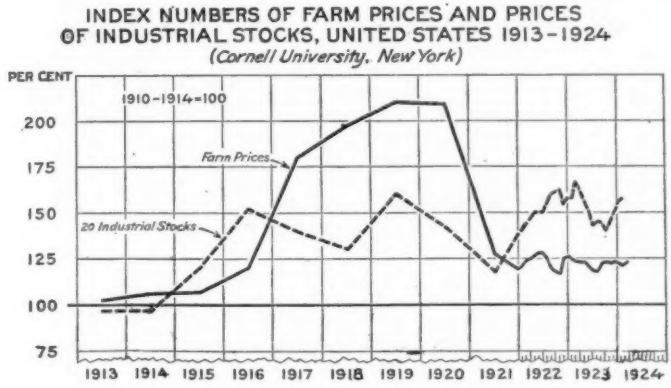

CHART 4

war, followed by the decline of industrial prices under the influence of the war measures begun in 1917, then the general high level after the close of the war in the years 1919 and 1920 when it became necessary to replenish the resources in goods exhausted during the war, and finally the collapse of this level and the drop of prices in 1921. At that time a new upswing began under the influence of a building boom and a general replacement of transport facilities. Moreover,

the prices paid to producers of farm products, which in the first two years of the war had lagged behind industrial prices, are seen to rise suddenly, in 1917-1919, far above the industrial curve and to drop with them in 1920 and 1921. They fell from 210 of the pre-war index to 128 and 122 respectively, and have been unable to recover. Agriculture has not kept pace with the re-ascending industrial level; the price divergence moves in the wrong direction. In neighboring Canada the situation was much the same. Chart 5 shows absolute prices for certain agricultural implements and machinery in Ontario for 1913 and 1923, and Chart 6 shows the relative price for essential implements as compared with the price of wheat in

RETAIL PRICES FOR FARM IMPLEMENTS
CANADA, 1913 AND 1923
(*Dominion Bureau of Statistics*)

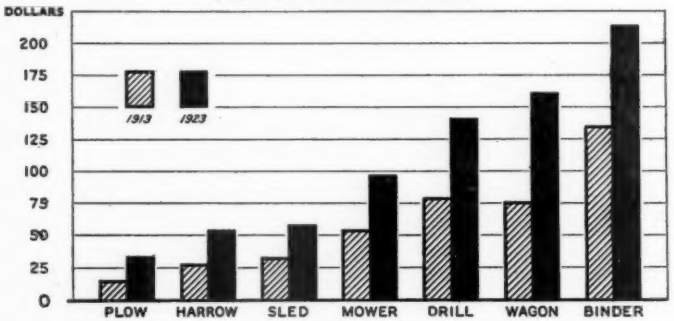

CHART 5

INDEX OF PRICES OF FARM IMPLEMENTS AND WHEAT
CANADA, 1923
(*Dominion Bureau of Statistics*)

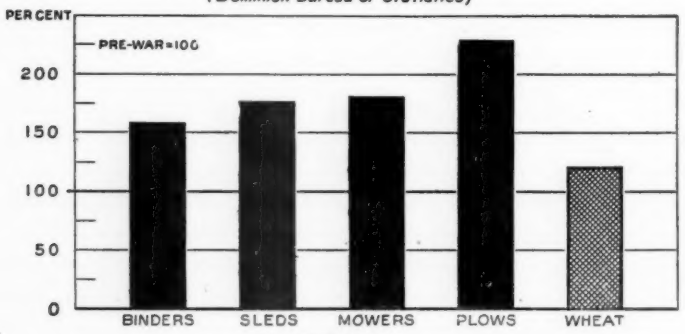

CHART 6

1913 and 1923 respectively. An ordinary plow costs 229 per cent of the pre-war price, while wheat brings only 121 per cent.

According to Chart 7 the situation in Russia is far worse; here grain prices (1923) have fallen to about 45 to 50 per cent of the pre-war price; cost of farm equipment of domestic make rising to 180 and 210 respectively, a situation which, however, is reported to have become somewhat ameliorated in the last quarter of 1923, the relation then being 86 to 137. The Polish situation resembles the Russian. Germany, so far as price-relation is concerned, occupies a position midway between the United States and Canada on the one side and Russia on the other. That country in which the price-relation has

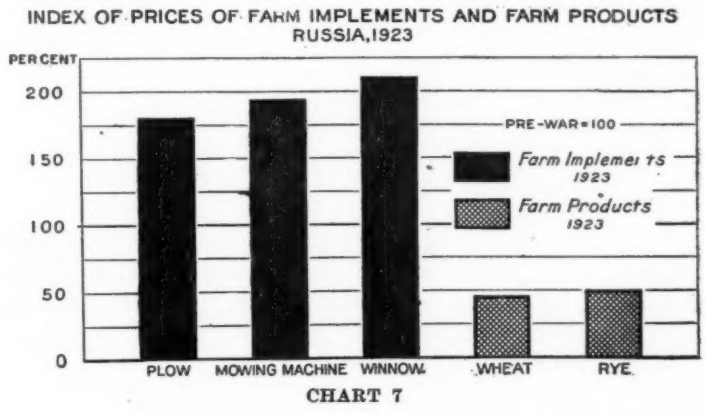

CHART 7

most nearly approached the pre-war condition is the one which has remained most loyal to free-trade principles: England (Charts 8 and 9).

Inquiring into the causes for the altered price-relation, an attempt may be made to gather them from the components of the price movement in so far as they appear in statistics.

(1) Chart 10 shows the relation between producer prices and the wholesale and retail prices of foodstuffs in the cities of the United States. It is shown that the difference between the price received by the producer and the price paid by the consumer has increased extraordinarily since 1921 as compared with the pre-war relation. Again, retail prices have a

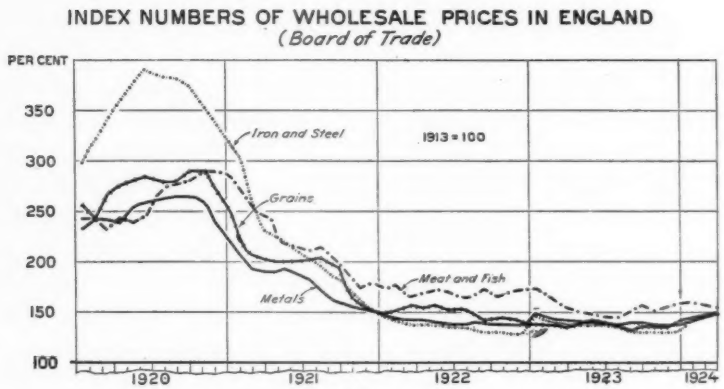

CHART 8

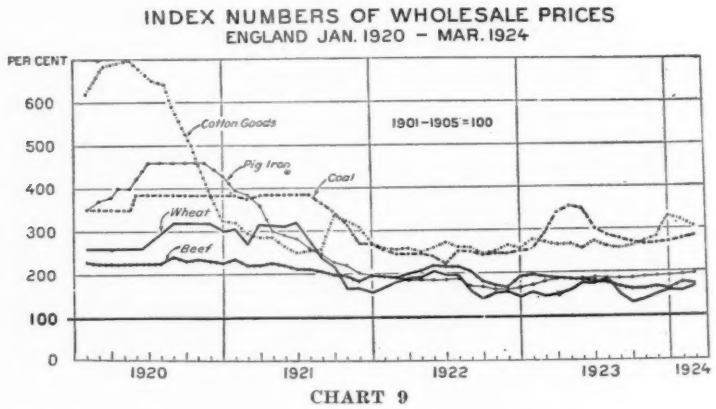

CHART 9

decided influence on the movement of wages. Increased wages reflect the unusually high costs of distribution. In the same way retail advances drive up industrial production costs. The investigation of the Joint Commission of Agricultural Inquiry has established the fact that, on an average, 49 cents out of every dollar expended by the consumer goes to cost of turnover and sales, that the mark-up of the individual dealer is not excessive, but that the mercantile structure as a whole operates upon a most extravagant basis. However it is not only in the United States that the entire mercantile apparatus, it is generally recognized, has been disproportionately extended during the post-war period.

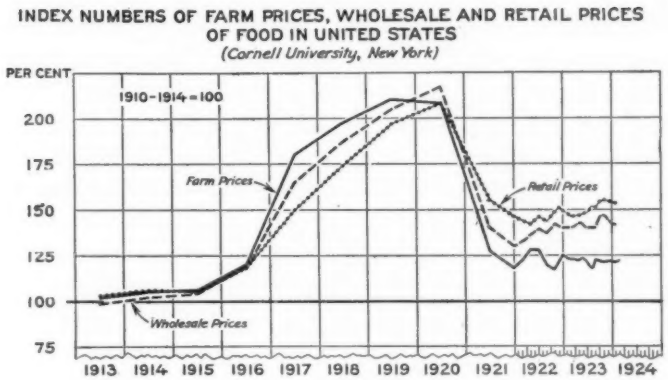

CHART 10

(2) Chart 11 shows weekly earnings of factory workers in New York compared with cost of living and the prices of 20 industrial stocks. Until 1920 wages closely followed the

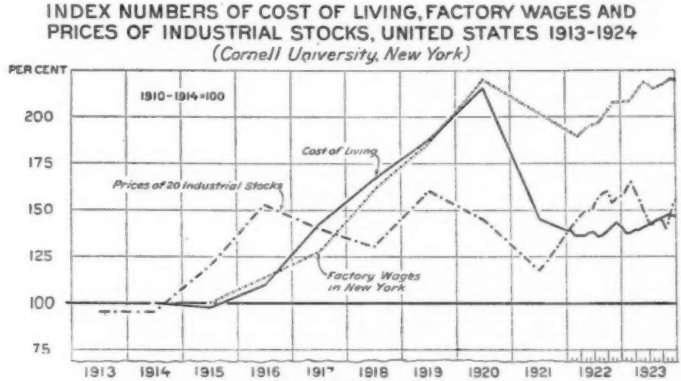

CHART 11

rapidly mounting food prices, but the sudden drop of the latter naturally was not followed by a corresponding drop in wages. The same condition had been observed in Germany after the stabilization of the mark. When the condition of the industrial market became more favorable, wages resumed their former high level of 1920 and remained fairly constant, although the industrial situation declined perceptibly. These figures illustrate the powerful position which the industrial worker obtained in the United States during the war and more or less everywhere else. The wage movement is abso-

lutely paralleled by that of England and possibly by that of most countries which were spared the disastrous inflation experienced in Germany. The American factory worker's income since 1920 is relatively, often absolutely, higher than that of the small farmer. The latter has been reduced to a scanty income from labor wherever tenant farming has replaced farm ownership, and tenantry obtains in a surprisingly large number of cases.

Not only the farmer, but farm labor as well, have not kept pace with their urban fellow workers. Chart 12 compares the

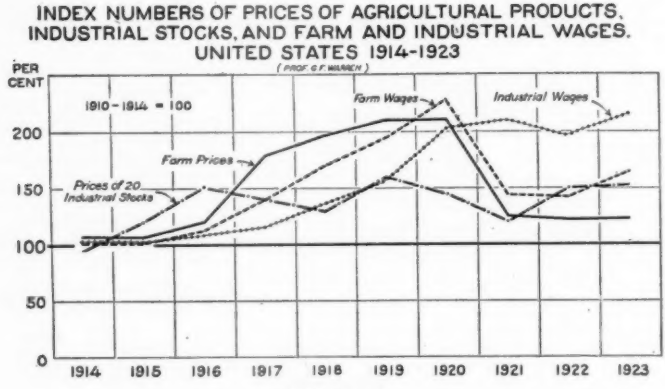

CHART 12

farm labor wage with that of the city worker and repeats the agricultural and industrial price curves. Until 1920 and 1921 the farm labor wage paralleled the fluctuations of the agricultural price curve, while the industrial wages moved quite independently of the industrial price curve. The difference as explained by Prof. Warren is that the majority of farmers have no permanent hired help. Comparatively few employ more than one wage earner. The farmer works shoulder to shoulder with him and finds it difficult not to share his prosperity with the worker. But when the farmer is losing money, the wage earner usually knows it and is more inclined to accept a reduced wage than is the factory worker. On the other hand, the developments of the past few years have shown that a relation exists, due to mobility of population, between city and agricultural wages. According to the same author a

million persons, largely young men, have left the farms since 1922. Since that year, agricultural and city wages have paralleled each other upwards independently of the movement of agricultural prices. In 1923, the agricultural wage index was 162 and the agricultural price index was 122 above the pre-war base.

(3) In addition to price pyramiding and wages, the consumption tax levied by the monopolies in raw materials, finished manufactures, and transportation has been an important factor causing the industrial price curve to diverge so much from the curve of agricultural prices. The trust has found its classic development in the United States. American trade policy and the War have extraordinarily strengthened the power of the coal, railroad, oil, etc. combines. This, however, while true of all countries is more especially so of the victorious states. For after all, to a large extent the considerations in the war waged against the Central Powers were those natural resources of the world which had remained beyond the grasp of the imperialists. Great monopolies are now in the position to be able to dictate prices to the whole world, with the result that technical progress, at least in industry, no longer coincides with price decline.

(4) The great protective tariff wave which encircled the globe after the war, and which everywhere has raised new trade barriers, has all in all benefited industry more than agriculture. Protective tariffs benefit agriculture it hardly needs to be said, only in importing countries. The high tariff of the United States on Canadian wheat appears to an outsider to be dust flung in the eyes of the farmer. The really high duties on dairy products have some real weight in view of the butter and cheese imports from Denmark. It is well known that German industry, also, was given preferential tariff protection over agriculture, inasmuch as industrial duties were continued while those on agricultural products were allowed to lapse. Up to the time of the stabilization of the mark, the depreciation of money was, to be sure, a great protection to agriculture in preventing an influx of cheap supply. On the other hand, this "protection through the exchange rate" commensurably increased the cost of raw materials.

(5) Finally, allowance must be made for the lesser elasticity of agricultural as compared with industrial production. Industry is extraordinarily quick to adjust its output to the rise and fall of prices. The farmer's total output depends on the size of his establishment, the output of his special pursuits (crops, live stock, etc.), and upon natural and economic conditions. The rapid expansion of the wheat area in the United States during the war "was partly at the expense of well-balanced rotations and other principles of sound farming."[3] In consequence of drastic curtailment of production, post-war industry has from time to time experienced attractive prices which, however, in every case very soon lost this attribute, while a permanent depression has hung over agriculture.

But all these factors, the expanding apparatus of distribution, the strengthened position of industrial labor, the activity of the trust magnates in promoting monopolies in raw materials, the industrial tariff protection, and the greater flexibility of industrial as opposed to agricultural production, in no wise serve to reverse the price relationship fixed by natural law, which obtained in favor of agriculture up to the close of the war. All these influences were more or less operative before the war, but remained powerless against the advantage which the unorganized farmers were able to secure again and again during the price struggle, because of expanding requirements which, in the face of a stagnant technique, could only be satisfied at greater cost. Because all agricultural cost factors, means of production, wages, freights, and interest on capital have become unfavorable to agriculture since the war, and the cost of agricultural production has undoubtedly gone up, the source of the continued agricultural price depression must lie in a very definite dislocation of the supply and demand balance, of available reserves and requirements backed by purchasing power. In order to discover the nature of this dislocation, it is necessary to examine the details of the agricultural price movement more carefully. This movement varied considerably for different commodities.

[3] Yearbook, United States Department of Agriculture, p. 160, 1921.

4. *Market Conditions of Farm Products*

Chart 13 gives the price index of farm crops and Chart 14 that of live stock products in the United States during the last quarter of 1923, the base being the average price of 1910-14. World cotton production is greatly reduced (1921-22, 37 per cent, 1922-23, 26 per cent of pre-war production), the United States being particular sufferers due to boll-weevil ravages and the negro migration to the North. At the same time, consumption increased in both North and South America and in eastern Asia, thus equalizing the deficit of European demand.

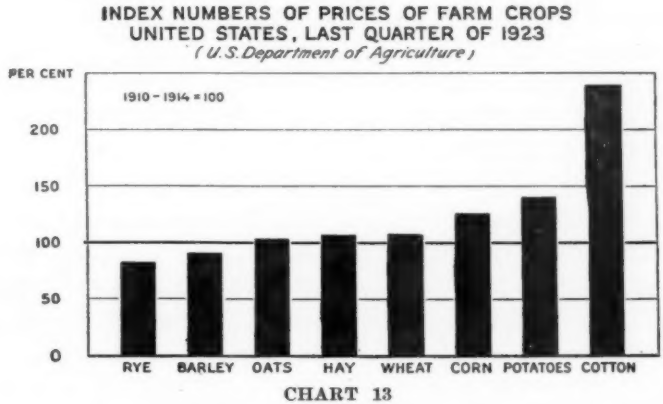

CHART 13

World wool production has decreased approximately one-seventh since 1913, in part as a result of increase in slaughter during the war, and in part as a result of the diversion of the vast flocks of the southern continent into the frozen meat trade. The demand for wool, however, developed considerable activity after the crisis of 1920-21 had been overcome, especially in the United States, where silk consumption too is on the increase. European fashions have also encouraged a steady activity in wool demand, and during the period of inflation it was not uncommon for all classes to invest paper money in wool-stuffs as not being exposed to depreciation. Thus prices remained high, and wool-sheep production continued to be profitable.

INDEX NUMBERS OF PRICES OF LIVESTOCK PRODUCTS
UNITED STATES, LAST QUARTER OF 1923.
(Cornell University, New York)

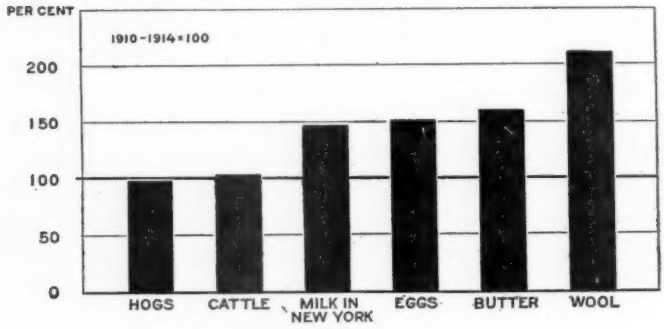

CHART 14

In respect to the other groups, two must definitely be isolated. Of the field crops, rye and barley remained considerably below, oats and wheat—also hay—slightly above the pre-war price level. In the United States, the level of the more important feedstuffs, maize and the comparatively little cultivated potato continued to be less removed from the wholesale price-index. Among the animal products, hogs and cattle are no more profitable to the producer today than they were before the war, while dairy and poultry products approach the general price level, butter even advancing beyond it. Complete price pressure has thus affected only commodities participating in international trade. Those products, the prices of which have only a domestic and not an international concern, approach the price level of industrial goods. The decisive causes, therefore, of the agrarian crisis are not to be sought at home, nor in a dislocation of important domestic factors; only those products—at least for the time being—are sufferers from the price decline, the surplus of which supplied the European urban population. What is true of the United States is equally true of other countries.

Thus the question is raised as to the causes of the unfavorable price structure both of the staple agricultural products and the cattle industry, trade in which constitutes the backbone of world economic organization. Is production

exceeding requirements? Do prices fall because the saturation point has been reached and the marginal limit of bread and meat is vanishing?—Measured by the pre-war standards, there then can be no talk of an overproduction. It is true that during the war a vast expansion of the wheat area took place in the United States, in Canada, and in British India, and that an extraordinary increase in meat exports from Argentina, North and South America saved the armies as well as the civil population of the western European powers from starvation. When, however, the blockade of the Central Powers was finally raised after the war, and central Europe once more assumed a position as purchaser, an alarming deficit in supplying the traditional import areas became apparent. Consider that before the war Russia had led all countries of the temperate zone in the extent of her crop area, and that her exports of domestic agricultural products were approached by those of no other country. It is true that, while the Russian export area was not invaded by the Great War, subsequent revolution and civil war caused the Russian agricultural surplus to disappear entirely from the world markets. Not until 1923 were exports of any consequence resumed. But very soon even these were again considerably diminished. This is true also of the Danube region, especially so of Rumania. Here, as in Russia, the overturn of the agrarian state, the destruction of the great estates and the changing of the entire eastern half of Europe into a domain of small farmers, has reduced export capacity to a minimum. North and South America had been able to supply the deficit of Russia and the Danube in the requirements of the western powers during the war. Their deliveries, however, were by no means sufficient to meet this eastern deficit in the requirements of the Central Powers and beyond that to make up for the recession of agricultural productivity which had overtaken the lands of central Europe, owing to the loss of men and horses, of the scarcity of fertilizer, and also because of a policy of government control which was markedly partial towards cheap supplies for the consumer. Looking at the

world's cultivated area, it is seen that, according to information of the International Institute of Agriculture in Rome, by adding the figures supplied by the Central Statistical Bureau of the Soviet Republic for Russia which are wanting in those of the Institute, 18 per cent and 17 per cent less land was planted to wheat in 1922 and 1923 than on an average during 1910-13. The cultivated area of oats had shrunken by about 12 per cent and 13 per cent, the rye area—including Russia—by 15 per cent and 7.7 per cent, and the barley area by even 20 per cent and 24 per cent. In 1922, the decline in world production, compared to the five-year period preceding the war, was 11.4 per cent for wheat, 24.8 per cent for rye, 22 per cent for barley, and 11.6 per cent for oats. The crops of 1923 were unusually abundant. The wheat yield in all countries exceeded the average, a condition which had occurred only once in the preceding fifteen years, viz, in 1915. The production—always including Russia—of wheat and oats equalled the average of 1909-13, of rye it was 16.9 per cent less and of barley 24.3 per cent less. It must, moreover, be considered that the population of the globe has increased some 10 per cent in the last decade, notwithstanding the war losses. So that even in that year of abundant crops, 1923, the supply was appreciably less than in pre-war days.

The excess of oats in the more important European countries during the period from 1909-13 to 1922 and 1923 has fallen from 100 to 61 and 69, that of barley even to 28 and 48 per cent. This deficit has not been even remotely balanced by imports of maize from the United States. The replacement of the deficit in east-European breadstuffs by the increased wheat imports, especially from the United States and Canada, has been more successful. The rye output which had formerly been consumed by the distilleries has also been absorbed in this process.

The volume of net imports of wheat and rye for 1923 is not yet available. Up to 1922, the net imports of wheat in England, Germany, and Belgium had not yet reached its pre-war status, and for the major European import states

combined it remained at 90 per cent and 95 per cent compared with that of the pre-war period. The imports of rye, on the other hand, had increased markedly. This is particularly true of Germany. Unable to supply herself with wheat bread to the extent to which she had been accustomed, she imported equivalent quantities of rye, gradually changing from a rye exporter to a rye importer. Germany's net imports of rye increased (1922 over 1909-13) by 11.6 million tons, while net wheat imports decreased by 5 million tons, net imports of breadstuffs thus increasing by around 6 million tons. To this marked extent has Germany's food balance declined below its pre-war status.

Export surpluses of breadstuffs from the great exporting areas, including Russia, were 104 per cent in 1919-21 and 112 per cent in 1922. Thus, although an adjustment with the population increase was already in progress here, the surplus could not be made available in Europe notwithstanding the latter's diminished domestic production. A considerable portion was sent to eastern Asia, whose markets absorbed large quantities of wheat flour.[4]

Taken all in all, *there can hardly be a question of flooding the world's grain markets;* when comparing the present with the pre-war situation, certainly this is the situation for feedstuffs, and they are precisely the commodities which have been most markedly depreciated as they have followed the absolute and relative decline of meat prices. Considering the great curtailment of agricultural production in Central Europe, the situation which presents itself is this, that the *decreased* supplies coming forward to market at cost of production at least one-third above the pre-war level, find takers only at reduced prices—must be disadvantageously disposed of at below production cost.

[4] United States wheat in the grain and in flour sent to Europe in the eleven-months period from July to May, 1923 and 1924, amounted to 138 and 64 million bushels, respectively, of which the United Kingdom received 35 and 21, Germany, Holland and Belgium 39 and 24 million bushels, France 14 and 2, Italy 33 and 8 million bushels, while China, including Hong King and Kwantung received 13 and 30, and Japan 6 and 11 million bushels. And still there is complaint that American flour brings less overseas than the domestic price.

5. *Dislocation of Demand*

The cause of dislocation is to be sought not in *supply* but in *demand.* One explanation which has been put forward is that the collapse of world economics as a result of the war affected the sensitive industrial mechanism more severely than it did the more robust agrarian structure, that industrial goods production suffered greater curtailment than the agricultural,—and therefore the spreading apart of the price curves. As a matter of fact, some of the major branches of industrial production which had been active in international markets also experienced post-war retrogression, but this deficit has been more or less compensated after, it is true, considerable fluctuation. World iron production in 1923 was 16 per cent less than that of 1913, crude steel production, on the other hand, only 3 per cent less, coal and lignite production about 2 per cent. These are shrinkages nowhere near those for agricultural products. Copper production increased by 3 per cent, oil by 163 per cent and 138 per cent above the pre-war production. Nor is it true that industrial productive capacity has been weakened. Both that in North America and in England is notably greater, and the technical equipment of the central European states has by no means depreciated since the war. Industrial productive capacity has deteriorated only in Russia, due to well-known causes, but on the other hand Russian industry never did participate vitally in the international market. Producers' goods, taken as a whole, either those with undiminished or those with increased output, cannot be absorbed because of insufficient markets. In England, Scandinavia, and Italy, in Switzerland and in the Netherlands, hundreds of thousands of efficient workmen are involuntarily idle, just as is the case in Germany since the stabilization of the mark has removed fictitious profits. In the United States, too, the spectre of unemployment is once more knocking at our door. Only the rents-holding

French have so far been spared in this regard. The causes of industrial disability can only be identical with those causes which have brought about the marketing difficulties encountered by diminished agricultural production since the war. They lie in the serious shock to European prosperity as a result of the war and of the peace provisions.

The purchasing power of western and central Europe is greatly diminished—in different degrees, in different places, and for different reasons. The western powers are chiefly affected by the public and private debt situation, and the contraction of their foreign investments during and after the war. A favorable factor in the trade balance of the industrial countries is the lowered cost of imported foodstuffs as compared with that of industrial goods. The goods export revenue, expressed in gold, now exceeds that of the pre-war period. Germany's invisible earnings have about as good as vanished in consequence of the uncompensated seizure of her merchant marine, her investments and enterprises in enemy countries, and of her colonies, including the private property situated therein, while such minor post-war investments and bank credits as Germany has been able to negotiate abroad have been fully offset by obligations growing out of the sale to foreigners of bonds, residential property, and mortgages. Germany's purchasing power is vitally dependent on her goods export, and that has shrunken to one-half of its former bulk (1913:10-1923:5.35 milliard gold marks computed on the basis of pre-war values). Decidedly in contrast with those of west European powers, Germany's productive assets, domestic as well as foreign, have been frightfully depleted. She has lost 9 per cent of her population and 13 per cent of her area, 75 per cent of iron and zinc resources, 26 per cent of her coal yield. Not only have many millions of Germans been subjected to compulsory alien allegiance, but their private property throughout large territories has been confiscated, witness the taking over by the French of the prosperous iron indus-

try of Lorraine, entirely the result of German effort. Fully to appreciate the effect of these proceedings, the fact must be taken into consideration that before the war Germany was the industrial spring from which power flowed to the entire European continent. Prof. Keynes says: "Round Germany as a central support the rest of the European system grouped itself, and on the prosperity and enterprise of Germany the prosperity of the rest of the Continent mainly depended . . . . Germany was the best customer of Russia, Norway, Holland, Belgium, Switzerland, Italy, and Austria-Hungary; she was the second-best customer of Great Britain, Sweden and Denmark; and the third-best customer of France . . . . The whole of Europe east of the Rhine thus fell into the German industrial orbit, and its economic life was adjusted accordingly."[5] Germany's requirements exceeded by 10.8 million gold marks those of undivided Russia with Finland, the three Scandinavian countries, Austria-Hungary, the Balkan states and Italy put together. Her imports were not far behind those of England and they exceeded those of the United States by one-third. Sixty per cent of her imports came from overseas. Germany and Austria-Hungary together took one-fifth of the total exports of North America, Australia, British India, and Egypt respectively, one-fourth of those of Brazil and Argentina respectively, and approximately one-third of those of British Africa. But while the war shattered the mechanism of this thriving economic structure born of 43 years of peace policy, the Versailles Peace systematically destroyed it and burdened the German population with tributes which will compel it to labor for foreign creditors for decades.

These proceedings are the only explanation of a price structure which finds no parallel in the entire economic history of modern times. The collapse of central Europe has sympathetically affected all countries of the world to the degree to which they participated in international industrial intercourse.

[5] Keynes, Economic Consequences of the Peace, pp. 14, 15. 1920.

The connection is well illustrated by Thünen's idealized state. In the normal course of events there is a balance not only between industrial and agricultural production, but also between industrial and agricultural earnings. The prosperity of the urban community and that of the agricultural community furnishing its subsistence are mutually dependent. There is an inherent tendency in agricultural prices to run ahead of those of industry. The urban community is attacked by enemy forces, robbed of its most essential sources of production and burdened with heavy tributes. Although its subsistence requirements remain unchanged, it has at its disposal only a fraction of the value of the products of the agricultural community. The price curves cross and criss-cross each other. Industrial products, expressed in agricultural equivalents, are enhanced in value. The cultivated area contracts simultaneously with the contraction of the urban market, and intensiveness of cultivation is generally moderated. This is a greatly exaggerated simplification of the present price crisis.

The theory of the plundered community makes all the details of the international agrarian crisis stand out as in a bright light. This is corroborated by recent observations of Henry C. Wallace, who says: "The low price and purchasing power of wheat directly affects the income of about 2,000,000 farmers. In large areas of North Dakota, South Dakota, Kansas, Nebraska, Montana, Idaho, and Washington farmers depend almost entirely upon wheat for their cash income . . . . The low price and purchasing power of wheat is far-reaching in its effects, for not only the wheat farmer but practically all classes of business men whose income depends to any extent upon the prosperity of the wheat farmer are adversely affected."[6] The Secretary conceives the cause of the distress to be the diminished consumption in European countries as compared to its pre-war

[6] The Wheat Situation. Report to the President. Washington, 1923. Quoted from "Berichten über Landwirtschaft." Berlin, 1923, v. 1, p. 232.

volume and in the more favorable conditions of production in Canada, Argentina, and Australia. The competition of these countries is making an increasingly progressive impression on the world's markets in respect of both quantity and quality. The most formidable competitor is Canada, whose production has increased 138 per cent above the prewar figure. Her scanty population forces her to seek world markets. In addition, she has some 170-200 million acres of unworked land excellently suited to wheat culture. The Canadian soil yield is greater, the value of land and of invested capital is less, her wheat is of superior quality, and the farm rents are more favorable. The Canadian farmer is therefore in a position of being able to operate at comparatively slight cost.

This presentation is the accepted one in the United States. It is found in an able inquiry of the Institute of Economics of Washington, D. C., from the pen of Prof. Edwin G. Nourse.[7] The price level of the United States is exceptionally high. Europeans, because of their weakened purchasing power must buy where goods are cheap. Even before the war the United States was headed towards an intensive industrial regime, her exports declined, more and more she was focusing on the purchasing power of the domestic market. The sudden increase in the production of food grains and meat during the war was possible only by resuming the extensive methods which had attended the opening of the West. The farmer of today must revert to more intensive culture and release the European markets to those countries given over to extensive culture.

Along with this we have reliable reports from Argentina and Canada as follows: Argentina profited little from the high war-time price of wheat because of the unfavorable shipping conditions. However, she greatly expanded her cattle industry. Vast areas were sown to alfalfa (lucerne); alfalfa having more nourishment than natural pasture and

[7] Nourse, E. G., American Agriculture and the European Market, New York, 1924.

being able to withstand drought better. In 1912 Argentina had 26 million head of cattle, in 1922, 37 million. The export of frozen and chilled meat increased enormously. But early in 1924 it was reported that for more than a year past the Argentine meat trade had been in a desperate state. It was paralyzed because of the depleted purchasing power of Europe and because of the arbitrary control by two trusts of the international frozen and chilled meat market. Prices of export goods are in the position of those in 1910, while imported finished products have risen 100 per cent. Similar conditions are evidently in process of development in agriculture. In order to recover the loss resulting from the undisposable surplus cattle, the breeders have raised rents disproportionately, considering the falling prices. This has put the small-farm tenants, mostly Italians, and who represent the larger part of the farming population in a very difficult position. As early as 1919-20 their unfortunate situation had led the farm tenantry to organize a strike of the most radical nature.[8]

Mr. J. A. Stevenson has made an expert report on the Canadian situation to the Agrarian and Land Settlement Institute. He says that Mr. Harry Grant of the University of Manitoba, after an investigation into the wheat production cost in western Canada, has come to the conclusion that it is an unprofitable business there. At two of the westernmost points under examination it was found that the production cost amounted to $1.07 and $0.92 per bushel at a yield of 18 bushels per acre. But in 1922 the farmer was receiving on an average only 82 cents for Manitoba wheat. In 1923 the price was still lower. Wheat raising does not pay although the growers have succeeded in producing wheat of an extraordinarily high gluten content and great frost resistance. "Intelligent farmers have grave doubts that the present price level warrants the cultivation at a distance of 1,000 miles from the sea, of a commodity as heavy as wheat." They are therefore turning their attention more to mixed crops. One difficulty is the lack of water in many places,

[8] According to a report submitted to the Agrarian and Land Settlement Research Institute by the late agricultural expert for South America, Dr. Pfannenschmidt, and a paper by A. Haas in the Weltwirtschaftliches Archiv, 1924, Heft1.

and costs of sheltering cattle through the long winter months are high. Mr. Stevenson discusses possible remedial measures such as a wheat pool through centralized marketing cooperatives, lowering of transport costs, etc., and closes with these words: "But such reforms are, at best, palliative measures. They may ameliorate but cannot lift the existing agricultural depression in Canada. . . . The prerequisite for any improvement in the condition of the wheat growers of the western plains is the economic restoration of Europe, their one-time principal market. The settlement of the west and its installation with technical operating equipment occurred only in response to the opportunity for supplying the industrial masses of Europe with means of subsistence. In the event of a realignment of the European economic system, or of the annihilation of the purchasing power of the European industrial population, then the principal justification for wheat raising in western Canada will no longer exist. Migration becomes difficult for farmers with large establishments and extensive equipment. If, however, Europe is not permitted a return to normal conditions, it is difficult to see how an extensive migration of farmers and a resulting contraction of cultivated area can be avoided. When the population of the United States shall have doubled and when domestic agriculture will no longer be able to supply her increased requirements of foodstuffs, then agricultural prosperity will return to eastern as well as western Canada. But in the meantime Canadian agriculture seems doomed to several decades of comparative stagnation, unless, indeed, Europe is released from her present pitiful state."

Similar convictions are expressed by Secretary Wallace concerning the United States when he advises the American farmer further to restrict his cultivated area to one compatible with the satisfaction of domestic demand. He recognizes, however, that these and like suggestions have only a future practicability. They are no more feasible for the American Northwest or Canada than for the cattle ranges of Argentina.

So much for the reports. They show that the price crisis has most seriously affected the agricultural frontier area.

Here the economic effort has been a very one-sided one, directed solely to quantity export to Europe. That the frontier farmers produce at less cost than do those of the long-settled, more thickly populated and therefore more intensively cultivated areas of the Union, is true, but that they have an advantageous competitive position I would be inclined to doubt. I will not dwell on that. Even should it prove to be so, it would not establish that which ought to be established, viz, that their low production cost determines the present level of wheat and meat prices.

The now passing point of view as to the price depression is still somewhat postulated upon the experience of the first price crisis (1876 to 1896). That originated in a surplus of consumable goods, therefore in abnormal supply, and did actually reduce prices after a certain market balance had been attained, to the particularly low production cost of the frontier farmer, i. e., the farmer of the extensively cultivated areas close to the periphery of the agricultural zone.

The present depression, however, emanates from the very heart of international trade and industry, originates, therefore, on the side of demand, and is founded on contraction of consumer prosperity. Supply, although correspondingly reduced, can be disposed of only at lowered prices; and, furthermore, the international market price is regulated by the purchasing power of the weakest consumer, or, to be more exact, the weakest consuming group indispensable to the taking off of the supply. And that is Germany. Her reciprocal contribution consists of industrial goods. Germany is exporting, expressed in terms of gold, only one-half of her pre-war volume. The current price of many of the necessary raw materials is higher than the pre-war price because they have either become scarce or because they are withheld by monopolists owing to the unsatisfactory market. Germany's ability to provide herself with the means of subsistence is correspondingly curtailed. The farmer of the great exporting territories, therefore, is the victim of the central European collapse. The purchasing power of his wheat and of the produce of his cattle industry in exchange for industrial goods,

has been reduced approximately to from 50 to 70 per cent of its pre-war power because of the depreciated equivalent which Germany is able to offer. The contraction of the bases of production in German industry and its heavy tax burden have raised production costs and weakened her competitive power. This has afforded monopolies and other forms of control of raw materials throughout the world a greater liberty in price manipulation, with the result that in the whole world, the country is being exploited by the urban agglomeration, the farmer by industrial capitalists. The disparity of prices, and with it the distress of the farmers, is, almost everywhere, being augmented by legislation and especially by high protective tariffs.

Surely the disparity between agricultural and industrial prices cannot be permanent. In the United States a contraction of the wheat area is taking place. On the other hand, whenever the farmer's purchasing power is diminished a collapse of the industrial up-swing has resulted, as in the summer of 1924. At the same time the prospect of a poor crop in Canada and in many parts of Europe has tended to drive up wheat prices. The consequence of all these circumstances was that in 1923 the purchasing power of farm products in the United States, and which including the appreciated dairy products then stood at an average of 72 per cent of the pre-war figure, had risen, to June, 1924, to 79 per cent. Even this, however, represents an unfavorable condition of the farmer. Should the impoverished state of Europe continue, then it might be possible that large crop and pasture areas, opened for cultivation during the past two generations, would revert to their original wild state. Not only that, but the less remotely situated areas, which are the chief feeders for the domestic market, would be sympathetically affected. Today much attention is being paid to the dairy industry in the United States with the result that prices of dairy products in the eastern centers show the same tendency towards weakening which they do in Europe.

The impoverishment of central Europe, however, will continue. The Dawes report whose provisions, it is generally

anticipated in the United States, will restore international trade and industrial conditions and markets falls short on the most essential point, viz, that of fixing annual German payments on a basis commensurate with the productive capacity remaining to reduced and mutilated Germany. The amount of annual payments due at the close of the five years recuperative period, 2½ milliard gold marks, is about one-half of the total earnings of the former prosperous and intact German empire, together with that of all its member states, in the form of net proceeds from all productive establishments and gross proceeds from customs and taxes (4.7 plus 1/3: 5.2 milliard). The Dawes experts, moreover, made no especial effort to investigate Germany's domestic economic capacity. The emergency provisions of the Dawes plan take no cognizance of appreciation of the bonds of the internationalized railways, of preferred stocks held by foreigners, or of industrial mortgages, annually another milliard gold marks. Even this burden involves greatly increased freight and production costs, which means a further and decided reduction of the volume of goods which Germany will be able to deliver in exchange for American wheat and meat or English manufactured goods—or, what is almost impossible, a further reduction on her part in wages. It may be that before long German industry will be offered considerable private credit, especially from American sources. But in the long run, Germany's enormous unproductive debt is bound to asphyxiate productive credit.

There is only one effective method by which the agrarian crisis, which is in reality a crisis of international trade and industry, may be overcome: the revision of the Versailles Peace Treaty. The interests of Germany are the interests of the civilized world. The experience of the past five years has demonstrated that international trade and industry is not a theoretical formula but a very real fact. It is impossible in any way to maim an important member of the economic organization spanning the world without sympathetically affecting all other living members.

LAND REFORM IN IRELAND

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In June, 1923, it was stated by the Irish Minister of Agriculture that up to that time "400,000 former Irish tenants have become owners, while the 70,000 remaining tenants will become owners during the next seven years under the provisions of the new Irish Land Act." At the time of the passage of the Ashbourne Act in 1885 practically every Irish holder was a tenant, yet it is planned that by 1930 every Irish holder will own his own land. The above change will thus have come about during a period of forty-five years and largely since 1903. Probably no other country has ever witnessed such a change by peaceable means.

There are approximately four and one-half million people living in Ireland of whom two-thirds are engaged in agriculture. Ireland is therefore predominately an agricultural country. Of the twenty million acres in the island some fourteen millions are in farms, and of this fourteen million acres, approximately ten million are in permanent pasture and another two million in grass, one million is in small grain, 600 thousand in potatoes, 200 thousand in turnips and 400 thousand in other crops. Eighty-five per cent of the farm land is not tilled and two-thirds is never touched with the plow or spade.

Ireland is a pasture country and predominately a cattle rearing country, in spite of the fact that if the land in farms were equally divided between all farm families there would be only about twenty-eight acres to a holding. Thus Ireland is a country of extensive farming and at the same time of small holdings. In 1902 there were approximately 500,000 farms on the island and of these, 50 per cent were less than 15 acres; 70 per cent less than 30 acres and only 6 per cent above 100 acres in size. In 1902, 70 per cent of the holdings had products of an annual value of less than $150, while 27 per cent had products of a value of $20 or less.

In the main, land reform in Ireland may be discussed under three heads, (1) fixing judicial rents, (2) converting tenants to owners, and (3) the enlarging of small holdings.

Early Irish history which includes no less than four seizures

of Irish land by conquest, resulted in the land of Ireland being held in large estates, the owners being mostly men of foreign birth. In 1900 the Irish landlords were largely descendants of English and Scotch colonists who had been invested with the conquered land by King or Commonwealth. Irish estates were for the most part of three types: First was the large absentee landowner who lived on his English estates and merely drew an income from Ireland. Second was the large landowner residing in Ireland who while having a large income was usually heavily in debt. Third was the small owner, a local resident usually hard pressed to make both ends meet. In the latter half of the nineteenth century nearly every Irish occupier was a tenant holding his land by a cash lease running for a term of years or by yearly tenancy; four-fifths of the total being of the latter class. The capital for operating and improving the farm was as a rule supplied by the tenant.

The land situation in Ireland has always been a political question, closely tied up with national desires. There was a feeling on the part of many that the property rights of the landowners had been secured by conquest and by political favoritism, that their right to an income from the land was a legal one rather than an ethical one. This feeling has been continually fostered by those seeking political freedom for Ireland. It is likewise true that much of the later land legislation has been brought about by an honest attempt to right these early wrongs.

Following the famine of 1846 there was agricultural depression in Ireland. Many tenants were unable to pay the rent and were evicted from their holdings. The termination of the tenancy often meant the confiscation by the landlord of the capital invested by the tenant, as the working capital of the farm was usually supplied by him. Even without an eviction it was possible for the owner, if not to confiscate, to at least tax the capital of his tenant by raising the rent. The rise of prices which took place between the years 1850-1870 occasions a marked increase in rents. Competition for tenancies was keen. Vacant holdings were consolidated into larger farms, so that the number of holdings available for small tenants became fewer and fewer. As there was little industrial development in Ireland the only outlet for the

population was to emigrate. Agrarian crimes became the general thing. Conditions were in a serious state when the Act of 1870 was passed, providing for compensation to the tenant for unexhausted improvement upon leaving the farm. The bill provided that a tenant whose rent was paid could not be evicted. But the Act was largely a failure. It protected the tenant only so long as he paid his rent. Conditions were serious when the Land Act of 1881 was passed which among other things provided for the establishment of Land Courts, whose duty it was to fix "fair rents" upon application. Rents were to be fixed for a period of fifteen years. A tenant could now not be evicted except for the non-performance of contract or for the arrears of two years rent. The Fry Commission defined a "fair rent," to mean "the yearly sum for which the farm in landlords' hands could be reasonably let from year to year, taking into consideration all the circumstances of the case in connection with the farm as well as with the whole district."

Of the 500,000 tenants in Ireland, 383,145 have had fair rents fixed for a first statutory term up to March, 1921. The result was a 20.7 per cent reduction in rent for the entire country. The entire number of rents fixed for a second statutory term was 144,133, the average reduction being 19.3 per cent on first term rents. The entire number of rents fixed up to March, 1921, for a third term was 6,213, with an average reduction of 9.1 per cent on second term rents. Owing to the progress of land purchase, the work of the Land Courts in Ireland is now nearly completed. In the year ending April, 1921, there were only 175 cases of rent fixing by the courts.

The Land Courts have proved popular in Ireland as might well be expected since their work has been largely to reduce the rents. It would seem, however, that the reduction in rent has in many cases been brought about by the partial confiscation of the landlord's rights in the land. Under the operation of the Landed Estates Court from 1844 to 1880 there were 10,034 estates sold to the value of £54,000,000 mostly at from 20 to 25 years purchase. In the purchase of land by the Irish Land Commission in Mayo County of late years the usual price to the landlord has been fourteen to

twenty years purchase while that paid to the tenant has usually run from thirty-five to forty, frequently from sixty to seventy years and sometimes as high as one hundred years purchase. Thus the tenant has in many cases acquired a greater equity than has the landowner. It would further seem that rack renting was never the real economic problem in Ireland and that it has sometimes been said to have been since rent was always a comparatively small part of the total expenditure on an Irish holding. A typical family budget on a Mayo County holding in 1890 would have been about $125 per year, of which $17 would have gone for rent, while on the poorer farms with an annual expense of $50, the rent would have amounted to $7.50. Thus rent and taxes made up fourteen to eighteen per cent of the total annual expenditure while on a typical Ohio farm it would have made up from twenty to twenty-five per cent. The real trouble lay rather in the uneconomic holding and in the general resentment against the land owners.

During the latter half of the nineteenth century it became apparent that there could be no permanent solution of the Irish question without some provision for landownership on the part of occupiers. To that end various land acts have been passed until today the most important class of land occupiers in Ireland are those former tenants who by having taken advantage of some one of the Land Purchase Acts, are now in the process of becoming owners of their holdings. Under the provisions of the Acts of 1903 and 1909 of the British Parliament the treasury procures the necessary funds to carry on the work by means of a loan at 2¾ per cent. Repayment is made by the tenant by a yearly contribution to the sinking fund of ½ per cent. The tenant's annual payment, therefore, amounts to 3¼ per cent on the purchase price. The period of payment extends over 68½ years. A little less than 400,000 or about four-fifths of all the holders in Ireland are now in this class or are in the process of becoming owners. 731 of these became owners under the provisions of the Act of 1881, 25,367 under the Acts of 1885-1888, 46,834 by the Acts of 1891-1896, and the remainder by the Acts of 1903 and 1909.

Land purchase is carried out by the whole body of tenants on an estate acting with the Land Commission, agreeing

with the landlord as to a purchase price. The Act of 1903 gave the Estates Commission power of compulsory purchase in the congested districts. When the commission buys an estate the tenants at once get a reduction in rent of three or four shillings on a pound, paying rent (or interest) to the board until the title is vested, then the fixed annuity. The annuity is thus fifteen to twenty-five per cent less than the former rent. Thus the Irish occupier who is now buying his land pays an annuity which is about twenty per cent less than that of his neighbors who are renting. This has caused considerable dissatisfaction on the part of many of those tenants who have not as yet been able to purchase their holdings. Since the period of the war progress has been slow in carrying on the land purchase. Little difficulty has been experienced in inducing the landowners to sell, since reductions in rent, heavy debts and political uncertainties have made them quite willing to dispose of their estates. In some of the rich grazing sections, however, where high rents are paid many landowners have not been inclined to dispose of their holdings.

In March, 1921, there were 350 holders in default of payment of Land Purchase annuities, all except thirteen of these in southern Ireland. In view of the fact that there were something over 300,000 paying such annuities this is really a remarkable showing. During the more recent years of internal strife, however, it has not been fashionable in many sections to pay the annuity and a considerable arrears has accumulated. This gives practical evidence of some of the possible shortcomings of such a system of land purchase. What the outcome will be it is too early to say.

As stated earlier in this article, Ireland is a land of small holdings, especially is this true on the West coast. Tenants evicted from the fertile lands of the east were forced to either emigrate to other lands or to take up holdings on the moors and mountain sides of western Ireland. In County Donegal a landlord gave holdings on a mountain side to a group of evicted tenants for an annual rent of 9 shillings per year, free turf, sea weed, and mountain pasture. Tillable land was created by carrying up sand and sea weed from the shore in baskets and depositing it among the rocks on

the mountain sides. According to a survey of the Congested Districts Board in 1891 there were 528 families comprising 305 persons in poverty in the Parish of Prelathomar, Mayo County; of these nearly half were very poor, while the remainder were even worse, being on the border line of absolute destitution. In addition to their potatoes and oats consumed at home, the cash receipts by sale of cattle, sheep, pigs, or eggs, amounted in each better-off family to $122 a year on the average, while the poorer families, about 300 in number, contrived to exist on cash receipts estimated at $44 a year, over and above the potatoes and oats consumed, valued at $85 a year. The chief item in the expenditure side of the family budget of $44 a year were, rent $7.50, maize meal $10.00 and flour $7.50. Such were the conditions in western Ireland in the latter half of the nineteenth century.

In 1891 the Congested District Board was created, and given the power to purchase and resell land. The Land Act of 1903 defines a Congested Estate as one "not less than half the area of which consists of holdings not exceeding five pounds in rateable value, or of mountain or bog-land, or not less than a quarter of the area of which is held in rundale or intermixed plots." It is the work of the board to convert the "deficit holdings" into economic holdings. This is being done by developing other industries as fishing, knitting, lace making, etc., but more especially by the enlargement of the holdings. Much of the tillable land in the Congested Districts is held in rundale, i. e. in small patches. A typical holding of 10 acres would be made up of from 15 to 20 separate and distinct patches, frequently none of these are adjoining. One acre of land was found to be held by different owners in 72 separate patches. This situation has been brought about by division of estates at death and by the practice of giving a wedding dower to the children.

Power was given to the Board when established in 1891 to purchase and resell land. At first only the power to purchase the interest of tenants in their holdings was given for the purpose of amalgamating the holdings of out-going tenants with those of neighboring tenants. Apparently it was thought that tenants would be willing to sell their holdings and to emigrate, but the Board found no place where

even one tenant was willing to sell his holding with this object. Later the Board was given power to purchase entire estates and to enlarge the tenants holdings out of untenanted land. Thus far authority has not been given to move tenants out of the congested districts to the fertile lands of the east, although the project has been much discussed. An official staff of inspectors, and surveyors have been trained, and as soon as an estate is handed over to them for treatment, a scheme, accompanied by a map, is prepared, showing how tenants holdings will be consolidated, enlarged and improved and at what estimated cost. Many single holdings at the time of purchase by the Board are in numerous detached and widely separated plots, and, in the scheme for re-arrangement, an effort is made to rearrange or "strip" the holdings where desirable. Again where untenanted land has been acquired at a distance from small or "uneconomic" holdings, new farms are carved out of the untenanted land upon which new houses are built for men who will be likely to make such larger holdings profitable and who will, as before explained, leave their former land for the enlargement of small adjacent or neighboring holdings. Tact and infinite patience are required on the part of the Board's officials in "stripping" so that the re-arrangement scheme may receive general approval from the tenants; and this is practically always the result when land is available for enlarging holdings. Inducement is given the holders to favor reallotment, in that the new holdings are generally a little larger than the old, and in that financial assistance is given for new buildings.

Up to date something like two and one-half million acres have been purchased by the Board, and have been or are being reallotted. An economic holding has been considered as "one which will provide a suitable living." In general a holding of about $50 annual rental has been aimed at as an economic holding; while this does not provide as large a holding as would be desirable for economical operation, it is usually all that the available land will allow. With the gradually rising standard of living in western Ireland it will be interesting to see how long a $50 holding will be considered "economic."

MARKET PRICE ANALYSIS

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There seem to be several good reasons why market price should be handled in special courses separate from marketing organization. Furthermore, the general subject of marketing lends itself to being divided on this basis. The market price analysis is concerned with the actual prices prevailing in the market, and the manner of their determination and the reasons for their fluctuations. The marketing organization analysis is concerned with the structure of the market, the internal organization of the numerous types of business units operating in the various markets, and the interrelations of these various business units, and division of functions between them. The market price analysis is concerned with the larger aspects of market structure and organization, because this structure and organization provide the price-making mechanism of the market. The nature of this mechanism has an important bearing upon the manner in which the forces work themselves out in the determination of price. It determines how closely buyers and sellers are brought into communication with each other, and how the forces arising from demand and supply work themselves out. But, after all, this is but one aspect of marketing organization. The whole of the problem of economy and efficiency in handling of the commodity, and in buying and selling, and in financing, is outside the special sphere of market price.

The market price analysis portion of the marketing field has been rather generally neglected. Most of our marketing men are essentially marketing organization men. The market price problem has been left to the theorists in general economics who nearly always are interested in problems of a more general nature. In consequence, our market price analysis is in a very rudimentary stage. The problem is one for a man who knows his theory, but in addition is intimately acquainted with the marketing process. For some of its aspects, rather advanced statistical technique is needed.

The major problem in market price analysis is the adaptation of general price theory to actual market conditions. The prices which economists have generally talked about have not been the real prices prevailing in our actual trading places, but instead hypothetical prices that would prevail in certain non-existent idealized markets. It is highly important that our economic theory be expanded so that it fits these actual conditions more closely. We need something to teach that practical men will recognize as valid and fitting conditions as they know them. The economist who knows his theory has a chance here to make contributions to the subject that can be utilized by those immediately concerned with the marketing process. From the standpoint of economic theory itself, something needs to be done to make the price theory more vital. We need, for example, a theory of price change as well as of price statics. Given forces of certain intensity, our present theory explains fairly satisfactorily the manner in which they reach an equilibrium in a market price. But the actual market is a changing place, and the equilibrium is constantly moving.

With a view to discovering the general method of attack upon the problem, a preliminary study was made of three of the central markets for agricultural products in Minneapolis and St. Paul. The markets selected were the Chamber of Commerce as representative of the grain exchanges, the South St. Paul livestock market, and the produce markets of Minneapolis and St. Paul, together with such auxiliary organizations as the fruit auction companies and the call board for butter, cheese and eggs, which are closely connected with the market.

These markets differ materially in their characteristics and practices. The chief differences from a price standpoint arise from differences in the commodities, in their degree of perishability, their bulkiness, and their volume and importance, and from differences in the communication between the central market and other markets and between different central markets. The produce markets are markedly decentralized, with trading spread over a wide area.

There are a number of distinguishable market centers. The fruit and vegetable trade concentrates around the public market as a nucleus. The butter, poultry and egg dealers concentrate in another district, adjoining in Minneapolis, but at a considerable distance in St. Paul. The Minneapolis dealers have a call board, but St. Paul has none. In both cities, there is another concentration of buyers and sellers in the fruit auctions, which are located at considerable distances from the other market places. As a whole, the market presents an unorganized and unplanned appearance. Because of the wide area which the market covers and the lack of communication, there is a wide variety of prices in the market for similar produce at a particular time. Difficulties of standardization prevent future trading. There is little regulation of the trading practices in the market.

The livestock market is much like the produce market in its wide expanse, which is made necessary by the need of inspection before purchase and the bulkiness of the product. This allows sales to be made in one part of the yard without knowledge of sales in another. The principal feature of the buying side is the dominance of the packers. The packer buyers are excellent judges of quality and possess price information unavailable to sellers. The product is a joint one, to be cut up into a number of products selling at different prices. With cattle particularly, there is a wide range in the quality and yield of these products in different animals. Most of the dealers on the market are members of an exchange which exercises considerable control over trade practices. The grain markets are characterized by their high degree of organization, the close association of buyers and sellers during the market period, and the close communication with similar exchanges elsewhere. All dealers on the market are members of the exchange, which regulates trading practices closely. Future considerations influence the market more than in the other markets studied. Grain can be more easily standardized than produce or livestock and in consequence lends itself more readily to future trading.

These markets differ materially in the degree to which they are interrelated with similar markets elsewhere and the manner in which these relationships are maintained. There is also a difference in the degree to which one market period is related to subsequent market periods in the same market place. The fruit and vegetable market is the most isolated as to time and space. The factors present in the immediate market situation determine almost wholly what the price is going to be. The market is closely connected to the consumers in point of time, and changes in consumer demand become quickly reflected in the market. A sudden change in the weather may materially affect prices. Markets are held in line largely by the actions of country shippers. There is almost no reshipment of product from one central market to another. In livestock, the immediate situation has some little effect upon prices. In general, however, a change must continue for a week or more in order noticeably to affect the price. Short-time changes affect the price of beef more than that of pork, because of the larger portion of the hog utilized as cured products. This market is held in line with other central markets largely through the packer buyers, whose behavior is determined largely through the packers' system of dressing sheets. Wheat is influenced very largely by forces which are external to the immediate market situation. Prices in other central markets appear to influence the price of wheat in Minneapolis more than in the case of livestock or produce. Future factors also influence the present price of wheat more than is the case in the other markets. The price of cash wheat follows the future more often than it deviates from it. The conditions on a particular day have little effect upon wheat prices. Thus at one extreme is the produce market where prices are largely determined by the factors immediately present in the market situation, and at the other extreme the wheat market in which the prices are the result of factors which may be said to be external to the immediate market situation. The survey indicates that markets differ materially in the relative importance of the forces operating in them and that much of market price analysis must be concerned with particular markets.

This empirical examination of these central markets shows that our usual price analysis is deficient in a number of important aspects. In the first place, the usual analysis presupposes an economy in which producers and consumers deal directly with one another. This forms but a small part of the transactions in our modern economy. The majority of transactions take place with intermediaries between the producer and consumer on at least one side, and in the central markets, largely between the intermediaries alone. This necessitates a modification of our usual explanation in two ways. First, considerations of the utility of goods cease to be a direct factor on the buying side in all cases except where the consumers themselves are the purchasers, and this is but a small part of the total transactions. It is not sufficient, as is usually done, to say that the demand schedule of the dealer simply represents the derived demand schedules of his customers, for it is much more than this. It includes considerations of cost and turn-over as well as prospective demand. Secondly, where there are dealers on the buying side we cannot say that costs have no influence upon market prices. The dealer's demand schedule is a derivation of his customers' demand schedules plus considerations of cost, and these costs are influenced by volume and turn-over. The dealer's schedule is therefore by no means a simple composite of his customers' demands.

In the second place, we must recognize that the prices in the market are not determined by what one might call the real or ultimate facts of demand and supply, but rather by the opinions of those in the market in regard to these ultimate facts. Such changes in price as take place come through a modification of these opinions. Changes in quantities produced, changes in demand, and changes in cost affect price only indirectly through their influence on dealers' opinions. The factors which dealers watch are therefore of great importance in determining price, and a large part of the price problem is the determination of these factors. The opinions of dealers in the central market are particularly important, because the prices in our central markets occupy a dominant

place in our price system. Changes in consumer and producer prices work out largely through changes in the central market prices. For example, an increase in demand becomes manifest to an individual grocer largely through the greater rapidity of sale of the particular product. He will not ordinarily increase his price for this product, preferring to gain by his more rapid turn-over, as long as he can still purchase at the old price in the central market. In the central market, however, if the increase in demand is general, it accumulates to the point where it is apparent to the dealers. The increased flow of goods from the market depletes dealers' stocks, and incoming supplies can be increased and the outgoing flow decreased, only by an increase in the price of the product, which increase takes place. The individual grocer now finds his goods costing him more and is likely to increase his selling prices, which in turn decreases the rate at which the goods are sold.

There are certain ultimate factors which these dealers in the central market are endeavoring to estimate, and it is upon the estimate of these that the existing price depends. They are endeavoring, first, to estimate the total stock of goods that will be available for the market during the season. This is an extremely difficult calculation, and the best that dealers can do in most markets is to form a vague general opinion. The dealers are also interested in the rate of flow of the goods to the market, and probably watch this flow more closely than any other factor. It is, moreover, a matter upon which they are able to get rather definite information, since they see the goods actually passing through their hands and those of their competitors. A comparison of the rate of flow and the stock of goods is also a calculation of great importance, since it gives evidence of probable future market situations. Often the notion of the total stock is formed mostly by observing this rate of flow of goods through the market. The dealers also endeavor to estimate the price at which consumers will take the stock and what the variations of demand will be at different periods of time. In general, however, these calculations of demand do not seem to con-

cern dealers as much as the calculations of supply. They are usually less predictable and less marked than changes in supply. Dealers, in consequence, often come to take demand for granted and consider it nearly uniform at all times.

If dealers are mistaken in their estimates of these ultimate factors, as they often are, then the prices which prevail in the market are different than the prices would have been if all the facts were known. Moreover, these mistaken estimates have important effects upon subsequent prices. In a sense, these ultimate factors are the price determinants, for sooner or later they become evident and force the dealers to revise their estimates. But in the meantime, the rate of flow of the goods into consumption has been modified and the earlier and subsequent prices have been changed from what they would have been had the estimates been correct. This is a price problem that has never been fully analyzed. It is these changes in dealers' opinions which give rise to the minor fluctuations during short periods, that cause seasonal fluctuations to reflect something more than carrying costs, and enable those who guess the facts better than the general run of the market to make a gain. These minor fluctuations are probably detrimental to producers and consumers, but there are circumstances under which producers individually and as a whole may gain through dealers' mistakes which cause the longer-time fluctuations. The solution hinges on the rate of flow and the changes and shape of the demand curve. There is need of concrete information on these points.

The assumption of the establishment of a single price in the market is violated at times in all our markets. In all markets covering a considerable area, there is usually a variety of prices for similar products at the same time. There are, in fact, two sets of prices ruling in our actual markets, one the range of prices prevailing over the market at a particular time for products of the same kind, and the other the succession of prices prevailing from time to time. This gives rise to the problem as to which one of these prices can be said to be the market price, and also as to what is the effect of these different prices upon those operating in the market.

The usual price analysis implies, although it is rarely specifically stated, that all of the commodity in the market is of the same grade. In our actual markets, however, the commodity is usually found in a great many different qualities. This increases the difficulty of the market price analysis by adding at least two problems. One must first explain the price relationships between the different qualities of the commodity at a given time, and secondly, one must explain how and why these price relationships change. This is in addition to the larger problem already discussed of explaining the general rising and falling together of the prices of all the qualities of the particular commodity during a period of time. In some markets, such as the wheat market, these price inter-relationships between grades can be said to be as important to certain classes of dealers as the more general market price changes.

The nature of the response of the price system as a whole to changes in the central market prices differs in the actual markets from the theoretical perfect market. In the first place, prices in the producer and consumer markets fail to follow the prices in the central markets at once. This lack of response is often costly. In the produce market, especially in periods of gluts or temporary oversupplies, with consequent low prices in the central market, produce often rots there, even though consumers would be glad to purchase all of it at prices at which the central market dealers would be glad to sell and still allow the retailer his usual margin. But the retailers refuse to increase their purchases materially. They do not wish to lose on the produce which they already have in stock which would have to be sold at the same low price as their new purchase. To a lesser extent, this same problem exists in the other markets. Secondly, the response of consumers and producers to these price changes is not always as expected. When prices fall, quantities brought to the market do not always decrease, but over short periods often increase materially. Similarly an increase in price often causes an increase of demand. The opposite situations are also true. They arise because of changed opinions as to

future market situations. This has led some economists to maintain that there is a degree of indeterminancy to market price. Such a manner of expressing the situation is apt to lead to a confusion between the economists' theoretical market price and the real market prices.

This is sufficient to indicate the general nature of the field. The research should be largely an amplification of our economic theory to make it fit more closely the actual conditions of our markets. This is the first problem. Later there will need to be statistical verification of our conclusions in many cases, and quantitative measurement of the market price forces. Those working in the field of market price will be interested in such problems as the possibility and method of price forecasting, the evaluation of various types of markets as to their efficiency as price discoverers, the nature of the losses arising because of defects in our price system and the means of correcting them, the development of scientific methods of price quoting, the determination of significant market statistics and methods of disseminating them. When one considers the ill repute in which price theory stands among those actively engaged in buying and selling and how immensely useful such theory might be made, one wonders why more has not been done. The time has come for an active development of this field of marketing.

THE MEASUREMENT OF FREIGHT RATES

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Freight rates, like other prices, have been fluctuating violently during the past few years. The extent of these fluctuations has been the subject of much controversy. Therefore, it seems desirable to evolve an accurate method of measuring these fluctuations. There are three methods of measurement in use at present, index numbers of the revenue per ton mile, index numbers of the percentage changes, and index numbers of actual freight rates. Of these, the first two are much more commonly used. Both, however, are subject to inaccuracies to a considerable extent. The index number of the revenue per ton mile is lower than the actual rates, while the index number of percentage changes is higher.

The revenue per ton mile is too low because the average length of haul is steadily increasing. This fact is shown in the so-called Disque scale for rate making established by a decision of the Interstate Commerce Commission on June 29th, 1917, as reported in 45, Interstate Commerce Commission 254.

There have been several changes in the actual rates employed in this scale during the intervening time, consequently the present rates are somewhat different from those given in the citation. The present Class 1 rates in southern Michigan under the Disque scale together with the revenue per ton mile for the various distances are shown in Table 1. It is apparent that the revenue per ton mile is considerably lower for long than for short hauls.

TABLE 1

Miles	Rate per ton	Average revenue per ton mile
5	$ 5.80	$1.16
25	7.30	.29
50	9.20	.18
100	10.80	.11
500	20.10	.04

Table 2 shows the average length of haul per ton hauled for each year since 1900. The increase is apparent. This

increase would cause a reduction in the revenue per ton mile without any change in the actual rate.

TABLE 2. *RAIL HAUL PER TON, UNITED STATES, AS ONE SYSTEM

Year	Haul miles	Year	Haul miles
1900	242.73	1912	256.87
1901	251.98	1913	259.99
1902	239.10	1914	260.19
1903	242.35	1915	275.80
1904	244.30	1916	282.99
1905	237.56	1917	292.57
1906	240.89	1918	301.47
1907	242.05	1919	313.29
1908	253.94	1920	307.51
1909	251.10	1921	308.21
1910	249.68	1922	331.42
1911	254.10		

* Statistics of Railways in the United States.

Further inaccuracies in this method are caused by the fluctuation of the proportion of high and low rate freight. Different types of commodities take different scales of rates. This difference in the type of commodity is shown in Table 3 which gives the actual revenue received per ton mile for eight different types of commodities.

TABLE 3. REVENUE PER TON MILE FOR SELECTED COMMODITIES, 1901

Commodities	Average receipt per ton, per mile (cents)
Cotton	1.718
Livestock	1.116
Hay	1.025
Dressed meats	.905
Lumber	.770
Grain	.611
Anthracite coal	.603
Bituminous coal	.512

It is evident that if the quantity of cotton hauled were increased and the quantity of coal decreased, the average receipts per ton mile would increase. These proportions of various types of freight are constantly changing. Therefore, the revenue per ton mile may be changed without a change in the rate. Mr. Slason Thompson, director of the Bureau

of Railway Statistics, has computed the relative proportions of high and low rate freight over a period of years. His figures show that the proportion of high rate freight during a period of 20 years varied from 74.34 per cent to 79.17 per cent, while the low rate freight varied from 20.83 per cent to 25.66 per cent of the total freight carried. When strict accuracy is not necessary, however, this method is valuable because the figures are available over a long period of years, and the computations are comparatively easy to make.

The second method of measuring freight rates has been by compounding the various percentage increases and decreases. Since 1913 most of the large variations have been in the form of definite percentage changes; that is, practically all the rates in a given territory were increased or decreased by a certain percentage of the rates at a selected date. By compounding these changes a fairly accurate measure of the freight rate level may be obtained.

This method also has serious limitations. The index numbers obtained by this method are inaccurate because they take no account of many changes in rates not included in the general percentage changes. For instance, they do not include the reduction of rates on wheat in December, 1921. Because most of the variations in rates which are not included in the general percentage changes have been reductions, these index numbers are too high.

The percentage method is valuable, however, in that it gives approximately the rate level on all commodities. Therefore, an abstract of these changes is included here, with enumeration of the various percentage changes.

In 1914 the Interstate Commerce Commission granted an increase of 5 per cent on practically all of the rates north of the Potomac and Ohio Rivers and east of the Mississippi. In 1917 the rates in the same areas were increased approximately 15 per cent. On June 25th, 1918, the United States Railroad Administration advanced rates 25 per cent all over the United States. On August 26th, 1920, the most radical change in the rate history was made. In the northeastern states rates were increased 40 per cent, in the west 35 per cent, in the far west and in the south 25 per cent, while on

freight moving between the various sections the advance was 33 1/3 per cent. In addition to the increases just mentioned, there were two other important freight rate changes. These were the two 10 per cent decreases in 1922, one of which was on agricultural products and the other on non-agricultural products. While these percentage changes do not give a complete picture of all the freight rate changes, they do give a general idea of the comparative status of freight rates at any given time.

The third method of rate measurement, the index number of actual rates, seems to eliminate these inaccuracies. As might be expected, this index number falls between the low level shown by the revenue per ton mile and the higher level of percentage changes.

TABLE 4. INDEX NUMBERS OF FREIGHT REVENUE PER TON MILE, UNITED STATES. 1913 = 100

Year	Average freight revenue per ton mile	Year	Average freight revenue per ton mile
1900	100	1912	102
1901	103	1913	100
1902	104	1914	101
1903	105	1915	100
1904	107	1916	98
1905	105	1917	98
1906	103	1918	117
1907	104	1919	133
1908	103	1920	144
1909	105	1921	175
1910	103	1922	161
1911	104	1923	153

TABLE 5. INDEX NUMBERS OF FREIGHT REVENUE PER TON MILE, BY DIVISIONS. 1913 = 100

Year	East	West	South
1913	100	100	100
1914	101	101	99
1915	103	99	95
1916	104	95	92
1917	106	93	94
1918	130	107	112
1919	146	124	130
1920	162	132	135
1921	198	161	160
1922	187	146	147
1923	176	138	143

TABLE 6. INDEX NUMBERS OF PERCENTAGE CHANGES, 1913 = 100

Date	East	West	Far West	South
January 1, 1913	100	100	100	100
" 1, 1914	100	100	100	100
" 1, 1915	105	100	100	100
" 1, 1916	105	100	100	100
" 1, 1917	105	100	100	100
" 1, 1918	121	100	100	100
" 1, 1919	151	125	125	125
" 1, 1920	151	125	125	125
" 1, 1921	211	169	156	156
" 1, 1922*	211	169	156	156
" 1, 1923	190	152	140	140

* Rates on agricultural products were reduced 10 per cent on this date.

TABLE 7. INDEX NUMBERS OF FREIGHT RATES OF FIFTY REPRESENTATIVE AGRICULTURAL PRODUCTS, 1913 = 100

Year	Index Numbers	Year	Index Numbers	Year	Index Numbers
1900	104	1908	100	1916	101
1901	104	1909	100	1917	101
1902	103	1910	100	1918	117
1903	103	1911	100	1919	131
1904	102	1912	100	1920	147
1905	101	1913	100	1921	177
1906	101	1914	99	1922	160
1907	100	1915	100		

TABLE 8. INDEX NUMBERS OF FREIGHT RATES ON WHEAT, 1913 = 100

Year	East	West	Far West
1900	88	122	124
1901	87	122	124
1902	92	120	123
1903	97	120	120
1904	96	116	120
1905	92	113	117
1906	93	109	117
1907	96	104	111
1908	98	102	111
1909	98	100	110
1910	100	100	105
1911	100	100	100
1912	100	100	100
1913	100	100	100
1914	101	100	100
1915	103	100	100
1916	104	101	100
1917	106	101	100
1918	130	113	112
1919	149	126	123
1920	169	138	133
1921	208	166	154
1922	189	145	137

Tables 4, 5, 6, 7, 8 show index numbers prepared by the three methods. The indices of the revenue per ton mile and percentages changes were prepared in the usual manner from data published by the Bureau of Railway Economics and the Interstate Commerce Commission. For the index numbers, histories of actual rates over a period of 23 years were obtained from the public files of the Interstate Commerce Commission. From them the rate relatives for each month were calculated. When the rate changed during the month, the number of days each rate was in effect was considered in calculating the average monthly rate. The sum of the products of the rate times the days in effect was divided by the total number of the days in the month. The average monthly rate was divided by the average yearly rate for the year 1913 to get the rate relative. This average yearly rate was obtained in the same manner that the average monthly rates were calculated, that is, the number of days each rate was in effect was considered.

The rate relatives for all the different months were then listed for each freight rate considered. The arithmetic mean of all the relatives for each month was then calculated, and this average was multiplied by 100 to make the freight rate index number. The index number for the year was obtained by calculating the arithmetic mean of the index numbers for the twelve months.

The general agricultural index number (Table 7) was prepared in order that students might get a fairly comprehensive idea of the changes in rates since 1900, throughout the entire United States. This index number was based on the history of fifty rates, on fifteen agricultural commodities, choosing as far as possible the products which contribute the greatest rail tonnage. The list of commodities selected appears in Table 9. After selecting the commodities to be used in the index number, it was necessary to determine the proportions of the fifty rates which should be assigned to each commodity. This was done by apportioning the rates among the various products in approximately the same proportion which their railroad tonnages were to each other. Then if twice

as much wheat as oats were shipped, ordinarily twice as many rates on wheat were included in the index number. This weighting of the index number was done on data applying to the years 1920 to 1923, instead of the base year. The number of rates assigned to each commodity is also given in Table 9.

TABLE 9. COMMODITIES USED IN GENERAL AGRICULTURAL INDEX NUMBER

Commodity	Number of rates	Commodity	Number of rates
Wheat	8	Sheep	2
Corn	5	Oranges	3
Oats	3	Apples	3
Hay	5	Potatoes	3
Cotton	3	Cabbage	1
Tobacco	1	Butter	1
Cattle	7	Eggs	1
Hogs	6		

In the selection of points of origin and destination, an attempt was made to choose points in all sections of the country. Long as well as short hauls were included. Movements from east to west were selected as well as movements through the more ordinary channels of trade.

The three index numbers of the rates on wheat (Table 8) show the changes of the rates in different localities. It should be noted that in these wheat index numbers the geometric mean was used. This makes it possible to shift the base year easily. These index numbers on wheat probably typify the changes in other agricultural commodities.

These figures seem to indicate that further study along this line would be of value. These index numbers of rates represent such a small percentage of the actual number of rates that perhaps it is not representative. However, it does correct the inaccuracies of the other two methods and does not appear to have serious limitations of its own.

HOW SHALL COOPERATIVES BE ORGANIZED?

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Upon what basis should a farm cooperative be formed? Should it comprise many federated units which have been slowly evolved by farmers in local communities or should it consist of a centralized agency which has been built for the growers by outside organizers? Should it result from the careful experimentation of farmers or from the quicker organization of marketing experts?

These are not theoretical questions. There are two distinct methods of organizing cooperatives: either by farmers or by "outsiders," and which of the two methods is the better is an open question. Two-thirds of the California cooperatives have been organized by "outsiders." In less than three years time, Market Director Harris Weinstock formed eighteen of the California associations, or over half of the active associations in the State today. Created by outside talent, these associations did not result from slow experimentation by the men who were to do the cooperating. They did not arise from the realization by farmers that only through cooperation could they solve their marketing problems. They did come into existence through the activity of non-farmers.

Yet, "It has been the experience of the past that farmers must feel the need of getting together to meet a crisis in their affairs," says G. Harold Powell, "and the realization of the need must spring from within and not be forced on them from without by the enthusiasm of some opportunist who seeks to unite the farmers on the principle that organization is a good thing. American agriculture is strewn with the wrecks of associations that were the outcome of high motives and impractical enthusiasm."[1] Time and time again the authorities on this subject have declared that a cooperative association cannot be engineered into existence, but must result from the farmers' real need for cooperation.

[1] G. Harold Powell: Cooperation in Agriculture, p. 22.

As a theoretical proposition, this view is sound, although questionable, when applied to the practical problems of California cooperatives. Although over-night organization of cooperatives is in theory undesirable, theory is not the sole consideration. There is expediency. And in the case of the California cooperatives, expediency demanded that a theoretically ideal system give way to a practically workable system.

Practically quick organization of cooperatives by "outsiders" is open to two theoretical objections. Primarily, such organization is not necessarily dependent upon a true spirit of cooperation; secondarily, it is not built upon a system of local units. Yet, according to many authorities, not only a true spirit of cooperation but a true spirit of cooperation which is manifested in local units, is necessary for successful cooperation.

There is no question but that "outsiders" can organize cooperative associations even when the farmers themselves feel little desire to cooperate. Once a boom for cooperation is started, with a few local editors interested, a cooperative association can be erected upon no firmer foundation than enthusiasm. To huge gatherings of farmers, organizers can picture the accomplishments of cooperative marketing, exciting an enthusiasm similar to that of a revival meeting, except that the packer, not the devil, plays the role of bug-a-boo. Propagandizing literature can be disseminated among the farmers; cartoons and newspaper articles printed in local periodicals; field agents sent to interview prospective members; and the "drive" is on and hard to stop. But, according to the articles of incorporation of most organizations, it is necessary to enroll as members a certain percentage of the farmers growing the particular crop to be marketed, before the association even comes into existence. Consequently the embryonic organization is under the imperative necessity of securing members. From fifty to seventy-five per cent of the growers of the commodity which is to be handled by the cooperative must be convinced to "sign up." Now, Mr. Powell has written that in a true cooperative association the farmers create the association because they feel a real need for it.[2]

[2] G. Harold Powell: Cooperation in Agriculture, p. 21.

In associations formed by the above method, however, the farmer needs the association less than the association needs the farmer. And the farmer joins the association more in a spirit of cupidity than cooperation. He is told that if he stays out of the organization, he will lose money since it is going to secure a higher price for his product. So he joins the organization in order to get more money. Or he joins because he is afraid to brave the social ostracism of the farmers who do become members. At any rate, he feels little "need for cooperation." If a marketing association to be successful must be the child of necessity and the mother of a spirit of cooperation, organizations of the over-night type are fore-doomed to failure. Born neither of the necessity nor of the spirit of cooperation, they are created by professional organizers.

When associations are organized not by farmers but by "outsiders," they are usually built along centralized rather than federated lines. Of the eighteen associations organized by Market Director Weinstock, sixteen consisted of growers and a central agency—not of local associations and a central agency. Local associations are usually the result of local effort; they are not organized by marketing experts. Therefore, it is claimed that mass-organization of cooperatives is not only divorced from a spirit of cooperation but also from the group-organization of local farmers. And, "It is fundamental that the unit of each agricultural industrial organization formed to distribute and sell farm crops or for business purposes must lie in a relatively small area."[3] And again, "There have been many attempts to amalgamate the growers of a single crop in different sections into one large organization just as the Knights of Labor formerly attempted to amalgamate different laboring men into one central organization. None of these efforts have succeeded."[4] According to this view, each local association should sell its products under a local brand, thus preserving the element of local pride and local rivalry. To dispense with this, it is said, is to build cooperation without a cornerstone.

Therefore, one could conclude that the two major arguments levelled against the cooperative association organized by "out-

[3] G. Harold Powell: Cooperation in Agriculture, p. 20.
[4] Ibid., p. 21.

side experts" are that such organizations rest neither upon a spirit of cooperation nor upon local units. Theoretically, this condemns them. In actual practice, it is possible for organizations which have been constructed by outside organizers to function without appealing primarily to the ideal of cooperation or the pride of local groups.

Instead of invoking the members' idealism, the large-scale cooperative formed by non-farmers appeals to the purse, and if that fails, to the law. Not that it does not appeal also to the ideal of cooperation. All associations talk about cooperation abstractly, attempting to create a "cooperative spirit." But in one type of association the cooperative spirit precedes the association, and in the other, if it comes into existence at all, it follows the association. A local association would not be formed unless the farmers were willing to get together to organize it. Actually, cooperation builds the local association. But the centralized association builds cooperation, deliberately educating its members to cooperative ideals. When 14,000 raisin growers are "signed up" to an association amid the emotional hysteria of a huge drive, they are not motivated primarily by the cooperative impulse. "Farmer A" in southern California is not thinking so much of cooperating with "Farmer B" in northern California as of "getting even" with the packer and securing a higher price for himself. Not in the cooperative appeal, but in the price appeal lies the power of the centralized association. Only recently I was told by the head field agent of the second largest centralized cooperative in California that, "You must give the farmers the price first, and then build your 'cooperative spirit.' 'Cooperative spirit' doesn't go far when the farmer isn't getting a good price for his product." Consequently, it is possible to build a cooperative association without appealing primarily to cooperation. Instead, a successful centralized association can be created by appealing to the farmers' desire for a higher price, and by building a cooperative spirit upon the basis of economic gain.

Of course if the economic gain is not secured, and the crop not marketed successfully, there is trouble. And trouble is less likely to occur in the small localized association, where the members cooperate with the management, than in the large

centralized association, where often the members do not even know the management's policies. When the centralized association fails to secure a high return on its products, the tie that binds the member to the association is severed. There is little to keep the farmers from "bolting." Members are not likely to think, "I must not leave this association, because, if I do, I will hurt the other members." But in the local association, where a deeper spirit of cooperation flourishes, members are prone to consider the "other fellow." That is one reason why the federated associations have less trouble with contract-breakers than the centralized. When, in 1920, a questionnaire regarding members who had illegally severed their relationships with their association was sent to seven leading federated and seven leading centralized associations, the following answers were secured:[5]

	Contract-breakers			
	None	One	Few	Numerous
Centralized Associations	2	1	2	2
Federated Associations	4	2	1	0

Since 1920, due to poor returns upon members' crops, the centralized associations have had even more trouble with contract-breakers than the above chart indicates. Prices for members' goods falling, the centralized associations have been confronted with many "welchers;" so that they have had to tighten considerably their legal relationships with members. In this connection it is interesting to note that the centralized associations insist upon far more stringent legal ties than the federated. The reason for this lies in the fact that the centralized association promising its members higher prices for their products, faces acute dissatisfaction when higher prices are not secured. Therefore, associations which appeal primarily to the purse frequently appeal also to the law.

[5] The associations included in this questionnaire were:
Centralized associations: Associated Olive Growers of California, Associated Raisin Growers of California, California Pear Growers' Association, Central California Berry Growers' Association, Poultry Producers of Southern California, Sebastopol Apple Growers' Union, Sebastopol Berry Growers' Association.
Federated associations: California Alfalfa Growers' Exchange, California Almond Growers' Exchange, California Fruit Growers' Exchange, California Grape Growers' Exchange, California Honey Producers' Association, California Lima Bean Growers' Association, California Walnut Growers' Association.

But there is no doubt that a cooperative society can be built upon the price appeal, backed by the law, with little so-called "necessity" for cooperation and still less "cooperative spirit." It is no longer the "experience of the past" as Mr. Powell wrote in 1913, "that farmers must feel the need of getting together to meet a crisis in their affairs and the realization of this need must spring from within and not be forced upon them from without."[6] So greatly has the cooperative movement of California changed that, through the activity of outside talent, associations now can be constructed upon a larger scale and in a shorter time than by the farmers themselves. Although marketing authorities are apt to condemn this new method of organization, it is practical, quick, and efficient. True, it builds an association apt to have trouble with its members since it emphasizes individual gain rather than community service. True, such a method or organization is theoretically not as desirable as the older type. But, practically, it is quite as feasible. Without appealing primarily to the cooperative impulse it builds strong associations. Consequently, the truism that "cooperatives depend upon cooperation" is not to be taken literally. Many of California's associations rest less upon cooperation than upon legalism and commercialism.

So much then for the argument that an association organized by outside talent cannot function successfully because it is not built upon cooperation. This is the first of the two arguments raised against such associations, the second being that such associations do not rest upon local groups. It is claimed that a marketing organization should be built upon the basis of local groups in order to preserve local pride. To my mind, however, this method of organization is open to three serious objections.

First, such a method requires a long period of time. If, before an association is to be organized, farmers in each individual community must realize the necessity for cooperative endeavor, organization cannot take place over night. Under such circumstances, organization is bound to be a slow, experimentative process. In the case of the California Fruit Growers' Exchange, it took seven years, the first "local" association

[6] G. Harold Powell: Cooperation in Agriculture, p. 21.

being formed in 1888 and the central exchange in 1895. With the California Almond Growers' Exchange the process was even slower. In 1897 the Davisville and Capay local associations were formed, but it was only in 1910 that the almond growers' central exchange came into existence; so the period of organization covered thirteen years. These two cases are typical of the longer period of time required for the organization of federated associations.

But not only is this method of organization slower than the other; it is also more difficult. For farmers to organize of their own accord into local associations is far more difficult than for organizers to coax farmers into centralized associations. In fact, many cooperatives could not have been organized if they had had to wait upon local farmers to initiate a cooperative movement. And if American farmers are slow to develop cooperative marketing without non-farm aid, certainly foreigners, ignorant of our ways and customs, cannot be expected to develop cooperative marketing. Yet, 26 per cent of the membership of the Sun Maid Raisin Growers' Association is foreign;[7] 30 per cent of the membership of the California Bean Growers' Association foreign;[8] and one entire "district" association of the California Cherry Growers' Association foreign.[9] This "district" association of the Cherry Growers' Association is situated at Stockton and composed of 125 Italians. Moreover, until the enactment of the Alien Land Law of California, 50 per cent of the membership of the California Berry-growers' Association was Japanese. It is not strange that these associations, with foreign members, should have organized along the less difficult lines of the centralized sales agency.

Foreigners are not apt to form local associations of their own accord. As far as we have been able to discover, only two local associations composed of foreigners exist in California: a Japanese association which markets all kinds of farm products, and an Italian association which markets only one crop. Moreover, it is significant that the large federated associations

[7] C. F. Tucker: California Cultivator, February 16, 1924, p. 1.

[8] Manager Danly, California Bean Growers' Association, in an interview with the author.

[9] Manager, J. H. Robertson, California Cherry Growers' Association, in an interview with the author.

were organized before many foreigners had come to California. For instance, both the California Fruit Growers' Exchange and the California Fruit Exchange—the former organized in 1897, and the latter in 1901—were built by a very intelligent American-farmer class prior to the immigration of foreigners into California. All the federated associations, except two, have been organized since 1916. While the crops grown exclusively by Americans, then, are marketed through local associations of comparatively older standing, the crops grown partly by foreigners are marketed through centralized associations of later origin. The very fact that the foreign growers only recently have been organized into associations, and, even then, into centralized associations sponsored by "outside experts," shows that they are not apt to organize of their own initiative into local associations.

And yet many foreigners make good cooperators. The Japanese, particularly, make good cooperators. Until 1921, half of the membership of the Central California Berrygrowers' Association was Japanese. And the associate editor of the leading farm paper on the Pacific Coast told me that he considered the Central California Berrygrowers' Association one of the most successful associations in California.[10] That this association has secured excellent cooperation from its members is shown by the statement of its manager that, "We have never prosecuted a single suit nor collected a single fine."[11] This is an enviable record, particularly remarkable for an organization composed so largely of people of another race. Its history casts some doubt upon H. B. Hibbard's statement, "Nothing short of race difference seems to act as a barrier to cooperation,"[12] for it would appear that not even race difference can prevent cooperation. Hence, even if the Japanese and other foreigners are slow to take the initiative in organizing cooperatives, they make excellent cooperators when once organized.

The organization of cooperatives along federated lines may be theoretically ideal, then, but in practice it is open to serious objections. As compared to the centralized method of or-

[10] F. T. Swett, Associate Editor, "Pacific Rural Press."
[11] E. H. Haack, Manager, Central Cal. Berrygrowers' Association.
[12] B. H. Hibbard: Marketing Agricultural Produce, p. 299.

ganization, it is, first, more time-consuming, and, second, more difficult. Even in commodities grown exclusively by Americans it is cumbersome and perplexing, but in commodities grown exclusively, or partly, by foreigners, it is practically impossible. For, although foreigners often make good cooperators, they very seldom form local associations and never form federated associations. Therefore, despite its theoretical supremacy, the federated association is far more difficult to organize than the centralized association.

And, in the long run, the federated association is liable to be less beneficial economically and financially than the centralized association. For often locals are organized but fail to affiliate in federated associations; in fact, it is a very difficult matter to amalgamate farmers' locals into exchanges. And when locals do not federate into exchanges, the farmer loses money. He cooperates, it is true, but he cooperates under a system of competitive cooperation. His cooperative association competes with the cooperative association across the way. One association underbids the other. To sell its fruit, association "A" accepts a price lower than that which association "B" is demanding, and the result is that association "B" must either accept a similar low price or not sell its fruit. Consequently, when associations do not federate into central exchanges, farmers are likely to lose money.

This possibility of competitive cooperation is not farfetched. Of course, when farmers organize into local associations, the locals do not always fail to federate into exchanges, but the locals are always *liable* to fail to federate. In southern California, only 65 per cent of the local fruit associations being federated into the California Fruit Growers' Exchange, 35 per cent of the local associations are competing among themselves:[13] Four thousand grain elevators in the Mississippi Valley are competing among themselves.[14] According to the leading authority of the commodity system of marketing, Mr. Aaron Sapiro, "Each one of these grain elevators stands as a separate unit and sells against the other elevator. As soon as they think the market is going to be high, they dump their

[13] G. Harold Powell: Cooperation in Agriculture, p. 247.
[14] Aaron Sapiro: World's Work. 46:86. May, 1923.

wheat in, and the market is swamped. As soon as they think the market is going down, they hold off until the banker puts pressure on them. This is not cooperation.[15] Nor is this profitable to the farmer. When cooperative organizations fail to apply the principle of cooperation to themselves, no one loses but the cooperators. When cooperative organizations compete among themselves, as they often do in this country, the farmer stands to lose money.

To avoid the possibility of competitive cooperation certain authorities maintain that farmers should organize along commodity rather than local lines. In the cooperative movement of today, the commodity-organization is attempting to displace the locality-organization. The same struggle is taking place in the labor movement. Craft unions, which are federated local associations, are waging a defensive war against industrial unions, which are centralized commodity associations. While craft unions are composed of workers of particular trades in particular communities, and thus are liable not to cooperate in the laborers' cause, the industrial unions are composed of all the makers of a particular commodity and cannot avoid cooperative action. So one type of union represents competitive cooperation based on the locality, and the other class cooperation based upon the commodity. In the labor and farm movements of today, the issue lies between an older and tried but competitive type of association as against a newer and non-competitive but untried type of association.

The issue between the federated and the centralized association is an old one. In the business world it lies between the small-scale and the large-scale factory, and in the labor world, between the trade and the industrial union. Wherever this struggle occurs, the locality-unit seems, at first glance, the more desirable and the more tried form of organization. It rests upon true cooperation among producers. Even in pure business undertakings there is likely to be a greater spirit of cooperation among workers if the factory is owned by a single entrepreneur and run upon a competitive rather than a trust basis. In the cooperative movement, at any rate, the federated method of organization makes possible a firm foundation for

[15] Aaron Sapiro: World's Work. 46:86. May, 1923.

building the cooperative spirit. And, theoretically, it is the better method of organization.

But it is not perfect. The other method is the more feasible of the two, since it is quicker, less difficult, and cheaper. Without awaiting the slow development of local associations, without expecting farmers of their own accord to construct difficult marketing organization, without incurring the possibility of an uneconomical competitive cooperation—huge, successful associations can be organized. Even foreigners, who would seldom of their own initiative organize for cooperative marketing, can be welded successfully by means of the centralized method into strong associations. Through appealing to cupidity rather than to cooperation, such associations can be constructed quickly and cheaply. Yet the federated form of organization is the more desirable. Resting upon a local spirit of cooperation, built up through the course of many years, the federated association is in theory the more desirable even if in practice the less feasible of the two types. It more nearly approaches the ideal.

REVIEWS

Agricultural Organization in the United States, by Edward Wiest. The University of Kentucky, Studies in Economics and Sociology. Vol. II, 1923, XXII. 618pp.

Dr. Wiest states in his preface that he has written "*Agricultural Organization in the United States*" with the intent that it should serve as a textbook for a course with this name, such a course to be given by the department of agricultural economics. He believes that a course of this nature should be given in most agricultural colleges. One of his reasons for this belief is very interesting: "The whole field of agricultural economics," he states, "is still somewhat wanting in body, and it can well afford, therefore, to add to the specialized course in co-operation, rural credit, etc., one dealing with organized efforts for the control of the destiny of American agriculture." He also adds: "It is a course whose content presupposes considerable economics and political science, and should, therefore, be given in the junior and senior years." (p. IX)

The most fitting comment to make on Dr. Wiest's suggestion is that if agricultural economics is still wanting in body, the way to give it body is not to gather in a few more special courses of the sort he mentions, and especially not to do so if it involves reaching out into related fields for material, as in the case in point. The place where agricultural economics will get its body is in economic theory and statistics, interpreting "theory" in this case broadly so as to include the principles of organization for production, of choice in consumption, of the incidence of taxation, and so forth. Principles need to be taught in detail and in their adaptations to special fields, and agricultural economics is merely a body of material in which the principles of economics are thus presented for agriculture. It can be definitely stated that practically all the major departments of agricultural economics in the country are making a serious effort to develop a coherent, systematic body of material along these lines. There are, however, many people, especially publishers, who still look upon agricultural economics as a collection of special problems, such as credit, cooperation, land settlement, tenancy, and the like. The re-

viewer sincerely hopes that Dr. Wiest does not belong in this category.

As part of that body of agricultural economics theory, there will develop a theory of the economic function of the state with respect to agriculture, and likewise of the function of associations of agricultural producers. It is a field for which economists have not as yet developed many principles. The Austrian Sax made a beginning with the economic function of the state, but little has followed it. Dr. Wiest's Chapter I and Chapter XXIII are intended to meet such a need.

Then there is the whole science of organization itself, which analyzes objectives on the one hand, and people on the other, a division of applied social psychology yet to be developed—a job probably for the sociologist of the future.

For either of these developments, Dr. Wiest's volume is good case material. There is included in it just about that proportion of historical and descriptive and supplementary material which is needed for such use. Let either an economist with the proper predilection and training, or this hypothetical sociologist of the future, assign this material to his class for their reading; let him spend his lecture hours in why's and wherefore's and developing principles, supplying where necessary from the main body of theory in either field; and an interesting and valuable course should result. It is much to be doubted, however, whether one man can be enough of an economist and enough of a sociologist at the same time to encompass adequately both objectives.

Let not the reader think that the book has no economics in it. On the contrary, each and every economic question which arises in connection with the work and aims of any organization, is discussed anywhere from a paragraph to a page or two. But there is also similar discussion of educational issues, and likewise of technical agricultural matters. These various digressions make it clear that the author was, after all, writing for the general reader who knows little of economics, or of education, or of technical agriculture. For such, the book will be very useful indeed. Large numbers of workers in the fields of agriculture, in colleges of agriculture and out, in the U. S. Department of Agriculture, and extension workers most of all, have need of such information presented in convenient form.

Dr. Wiest has done a careful, conscientious job of compiling and organizing such information. His chapters on the Grange, Farmers' Alliance, and Farmers' Union are the best that have been written. His description of the work of the U. S. Department of Agriculture will prove to be the best brief account of it in existence. The most serious omissions are in connection with the Bureau of Agricultural Economics. Scarcely anything is said about the research work of the bureau. One is compelled to doubt whether Dr. Wiest, in view of his loose use of the terms investigation and research, and in particular his references to statistics, has an entirely adequate notion of the nature of economic research.

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Input as Related to Output in Farm Organization and Cost-of-Production Studies, by H. R. Tolley, J. D. Black and M. J. B. Ezekiel. (U. S. D. A. Bulletin 1277.) 1924. 44 pp.

The effect of differences in conditions on results observed in farm organization and cost of production studies has usually been demonstrated by means of sorting records into groups showing similarity in the main factors. The movement of the averages of the groups has been the basis of statements about the cause and effect relationships (previously established from general experience) between the sorting factors and the results. Qualifications have usually been necessary, and have often been "covered" by the phrase "other things being equal." But other things are rarely, if ever, equal. The operation of the law of diminishing returns, for example, is always disturbing. Significant changes in a single factor may be associated simultaneously with changes in several or all of the other factors. A means of measuring the effect of small differences in each of many factors contributing simultaneously to observed results has long been wanted. Those who have been wrestling with these problems will be grateful to Messrs. Tolley, Black and Ezekiel for opening up the way to the solution of many of their difficulties.

"The purpose of this bulletin," to quote from the introduction, "is to present a method of studying the effect of varia-

tions in details of farm practice upon the profitableness of the farm business." Some of the wide differences in practices of farmers are due to differences in conditions peculiar to individual farms, and some are due to differences in the adjustments made to existing economic conditions.

The discussion begins with a detailed analysis of the variations in methods and practices (input variations), with the requirement laid down that the net contribution of each of the productive factors must be measured in determining the effect of the variations in any one; and the effect of these variations upon the product (output per unit of input), with the requirement that, to be adequate, the effect upon output of each particular variation in input must be shown. Then the discussion takes up the adjustment of practices to meet changing price conditions, with the requirement that the analysis, to be adequate, must be so devised as to assist the farmer in making the shrewdest possible adjustment to coming conditions. The least-cost combination of inputs is shown to be not always the most profitable combination. It is pointed out that "the practices in handling specific enterprises may be considerably altered without changing the general balance of the farm enterprise or necessitating any change in farm organization.

All the analyses are applications of the principles of statistics, but, though the text is full of the technical terms used in the theory of statistics, these are so adequately explained that no one should find difficulty in following the discussion from beginning to end. To make similar analyses of other bodies of data is, of course, another matter. Still, the computations involved are long rather than difficult, and are explained "in plain English" in a series of papers, now available, for such persons as need to use them.

The use of net and multiple correlation computations gives effect to all the factors measured, and shows how closely the measured factors account for the results observed. The number of cases necessary to get equally good results by sorting and averaging would have to be tremendously increased. Errors of measurement obscure the correlations, but do not render the work fruitless. The materials used in the illustrations were not originally assembled for analysis by the net correlation method, and leave much to be desired in the way of

definiteness of detail in the results of computation. Nevertheless, they are sufficient to demonstrate the superiority of the method over the more common method of analysis by simple sorting. Indeed, much improvement can be made in the results of simple sorting, if more attention is given to distributions and less to plain averages. Refinements in computation and presentation go hand in hand with thorough theoretical analysis. The determination of least-cost combinations is made possible by the use of the regression equations resulting from statistical analysis. Absolute accuracy can seldom if ever be attained, but it is a relief to have a means of getting an estimate that will stand the tests of practical experience.

The bulletin registers as a long step forward in farm business and cost of production analysis. Investigators may dread the additional effort incidental to the application of the method, but the enthusiasm engendered by the satisfying results of it will carry them through the drudgery. Real accomplishment attends such effort.

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The Agricultural Crisis, 1920-23, by R. R. Enfield. 211 pp. London: Longmans, Green and Company. $3.50.

In spite of the title of this book, the librarian should classify it with the books dealing with monetary theory and credit policy. The author is primarily interested in the causes, effects, and possible remedies for price fluctuations of agricultural products. The period which he has under review, and from which he draws his data, lies mainly in the war and post-war years, 1914-23. After an examination of the price movements for these years, the conclusions reached are (1) that the scarcity of commodities was not the primary cause for the rise of agricultural products during the war, (2) that an oversupply of these products was not the cause for the great price decline following the war, and (3) that the primary cause for these movements is to be found in the monetary and credit policies pursued by the leading nations of the world. The agricultural crisis with which the author is concerned, he says, is little more than a symp-

tom of a world-wide price movement which was caused by monetary inflation and deflation.

Mr. Enfield is a whole-hearted believer in the "quantity theory" of money. He does not deny that other factors, such as poor harvests and heavy imports, may affect the prices of individual agricultural products, but in his analysis these factors are only of minor importance after all. He sums up his conclusions in the following words:

"Scarcity and abundance will, in the cases of individual commodities, go a long way towards explaining the rise and fall in prices, but they will not go far towards explaining the alteration in the general level of prices, for it is hardly to be expected that all commodities will simultaneously become abundant or fall short. For the explanation of the rise or fall of the general price level we must look rather to monetary causes than to those depending on questions of supply and demand." (p. 142).

Stabilization of agricultural prices is the goal towards which Mr. Enfield is looking. He states that he "does not propose to **control** the causes of trade fluctuations, but rather to use the means at hand which experience has proved to be effective in order to counteract them." In his opinion, the "means at hand" are discount rates. He severely criticizes the Federal Reserve Board for fixing the discount rates of reserve banks in accordance with the reserve ratio of the banks. Following closely Professor J. M. Keynes' line of argument, he advocates the manipulation of discount rates in accordance with the movement of a general index of commodity prices and the amount of unemployment in the country. In this way, he insists, it will be possible to eliminate the business cycle and keep price movements under control.

There can be no difference of opinion as to the desirability of the ends towards which Mr. Enfield is working. Violent changes in price levels are disturbing to all kinds of business, and they are particularly demoralizing to agriculture. However, one cannot be too sanguine as to the efficacy of the measures which the author proposes to attain the desired result.

Faith in the author's proposal to effect the stabilization of prices through monetary and credit reform depends upon

whether one accepts his explanation of the causes for price changes. It has never been demonstrated as yet that currency and credit conditions were primarily responsible for starting a trade boom and an upward price movement. Certainly, data collected during the war years cannot be considered sufficient to prove such a statement.

The sugggestion that price movements can be controlled through changes in the discount rates of the Federal reserve banks, providing the rates are changed in accordance with changes in the level of prices, is impracticable from an administrative point of view and is fallacious in its reasoning. Credit administration, in order to be effective, must always have a forward look. The banker must not only know what is taking place, but also what is likely to take place. He must make up his mind about this before the accomplished fact is registered in an index number of prices. Changes in discount rates, based upon a price index, would come too late to control business activity. The same thing, of course, is obviously true for figures of unemployment.

No statistical mechanism can be devised to furnish in itself an adequate guide to credit control. Reserve ratios, price indices, figures for unemployment, et cetera, alone will not do this. All these factors have to be taken into consideration when fixing discount rates. Given a Federal Reserve Board with infallible judgment, it is doubtful if any control of credit at the Federal reserve banks could be so devised as to prevent price fluctuations. Writers like the author overlook the fact that the conditions which make for a rise in prices also cause a demand for more credit. No doubt there is a relation between credit extension and price movements, but the relation is not a direct one of cause and effect nor even of antecedent and consequent. To oversimplify a problem contributes nothing towards its solution.

In the closing pages of the book, attention is given to other methods of stabilizing agricultural prices than through monetary and credit reform. He discusses sympathetically the establishment of a government corporation to deal in grain, with a view to stabilizing the price of these products. A plan similar in some respects to that outlined in the McNary-Haugen Bill is advanced. As a further aid to

stabilization, he advocates the extension of the cooperative marketing movement.

The philosophy of price making, recently given such wide currency in this country by the leaders of the so-called commodity cooperatives, is accepted in an uncritical manner. The author seems to believe that the cooperatives may control prices through the wider use of pools, and by securing control of a sufficient part of the supply of a commodity. One naturally wonders what might be the result if the cooperatives wanted to force the prices of agricultural products upward at the same time that the Board who had control of discount rates wanted to keep them on the same level. If prices are to be controlled by two agencies, it is necessary that these two agencies should agree as to price policies. The author does not suggest any way in which this agreement could be secured.

One need not agree with the analysis which the author makes to appreciate the excellent way in which he has presented his data. The book contains numerous charts, showing price movements of agricultural products, and an excellent interpretation of the relation of these price movements to the prices of other products. When the author is dealing with farm problems, he shows a sympathetic understanding of the farmer's condition, and his presentation of what changes in the price level mean to the farmer can hardly be improved upon.

Critics of the Federal Reserve Board's policy in 1920, believers in Keynes' theory of credit control, and those who think that agriculture can best be served in this country through a policy of mild inflation will cordially indorse the views expressed in this volume. Agricultural economists, however, who believe that the chief causes for the farmer's distress are to be found in the stimulated production, the impaired purchasing power, and the disorganized market relationships inevitably incident to a world war will find very little in it with which they can agree.

CLAUDE L. BENNER.

Institute of Economics,
Washington, D. C.

Introduction to Agricultural Economics, by Lewis Cecil Gray. New York: Macmillan, 1924. 556 pp., 26 chapters, 81 figures.

The purpose of this volume, as stated by the author in his preface, is to supply the needs of general readers who are becoming interested in the economic problems of agriculture, and to serve as a text in courses of general agricultural economics. It is evident that he has had in mind during its preparation its use in secondary schools as well as in colleges.

The author has essayed to cover in a general way the whole field now usually included under the term "agricultural economics." After an introductory chapter and one on systems of farming, in which he introduces a considerable amount of agricultural geography, he devotes ten chapters to economic problems connected with the internal organization and management of farms. The remainder of the text is occupied with the more general or collective economic aspects of agriculture, including one chapter on the place of agriculture in national production, three chapters on land utilization, land tenure, and land policies, one on agricultural capital and credit, one on agricultural population and farm labor, five on agricultural marketing, two on prices of farm products, and one on economic co-operation by farmers.

It is hard in the limited space allowed to give an adequate evaluation of this work. To the reviewer the strongest part of it seems to be that devoted to the general or collective aspects. Probably the most adequate and satisfactory portions of the whole work are those devoted to land problems and prices of farm products. These treatments are exceptionally strong both in their economic analysis and in the method of presentation. The ten chapters devoted to the farm organization and management topics seem to give a feeling of incompleteness and inadequacy. The author has attempted to get away from the purely technical point of view which has characterized most texts on farm management, and to give the problems an economic interpretation. However, there seems to be a tendency not to carry the economic analysis to completion. There is evidently too

much attention paid to the methods and tools of organization and management and not enough to the economic principles underlying the farmer's problem of maximum utilization of his productive resources. There are also several points in these chapters to which the production economist might wish to take exception; as, for example, the definitions of complementary and supplementary farm enterprises, the measure of the profitableness of varying proportional combinations of the factors of production, and the omission of a specific application of the law of diminishing returns to the problem of the proper size of farm business.

It is rather surprising to find the author devoting several of his marketing chapters to special phases such as cotton, dairy products, eggs, and vegetables and fruit, but omitting entirely a discussion of grain and livestock marketing. However, these chapters, with the exception of the omission noted, constitute an excellent general description of the marketing agencies and processes.

The book is excellently written and the order of treatment will commend itself to the thoughtful instructor as pedagogically sound since it introduces the student to economic ideas through the medium of familiar phenomena and proceeds from these to the more general and abstract. It will doubtless find a place in many colleges where the general course in agricultural economics is still retained. The elementary nature of the discussion which the author has evidently maintained in order to make the book usable in secondary schools may militate against this use of it, but if properly supplemented, it should prove the best available basic text for such a course.

As to its use in high schools, it will probably be eagerly accepted by agricultural instructors in consolidated schools and elsewhere who hitherto have been trying to give courses in the economics of agriculture without adequate material. Properly supplemented by an adequate number of concrete problems from the pupil's own agricultural environment, this text should be of great aid in this rapidly growing field of secondary school instruction.

C. L. HOLMES.

Iowa State College of Agriculture.

NEWS NOTES

Dr. G. F. Warren of Cornell University sailed for Denmark on August 20, on a brief mission for the United States Tariff Commission, in connection with an investigation of the competition of Danish dairy products.

Recognition of the importance of marketing work was given in a special appropriation passed by the New York Legislature of 1924, for the establishment of a course or courses in the study of marketing and agricultural business and to provide for such research as may be necessary to properly conduct the study of marketing and agricultural business.

This appropriation will allow for considerable expansion by the Department of Agricultural Economics and Farm Management into the fields of marketing. New courses will be offered in accounting, in co-operation, and in marketing. To provide for the new work, a number of additions have been made to the staff.

M. L. Holmes formerly of the School of Business Administration at Harvard University has joined the staff of the Department of Agricultural Economics and Farm Management for the first term of the present year as Acting Professor. Professor Holmes will offer courses in accounting in connection with the new marketing work at Cornell.

Mr. H. A. Ross, formerly of the University of Illinois who obtained his doctor's degree in 1924, has been appointed Assistant Professor of Marketing and will do special work in the teaching and investigation of milk problems of New York City market.

Mr. M. P. Rasmussen, formerly an instructor in the Department of Agricultural Economics and Farm Management, completed the work of his Ph. D. in 1924 and has been appointed Assistant Professor of Marketing. Professor Rasmussen will do investigational work and teaching in marketing of potatoes and cabbage.

Professor O. H. Larsen, Head of the Department of Agricultural Economics and Farm Management at the Royal

Agricultural College of Copenhagen, will be in Ithaca from February to September, 1925, to give courses in cooperation.

Mr. Frank LeRoy Manning who was a graduate student in the Department of Agricultural Economics at the State Agricultural College of New Jersey is now teaching vocational agriculture under Professor Sampson of the Agricultural Education Department.

A farm business analysis survey will be made of the Middletown area, New Castle County, Delaware, during November or December by the Agricultural Extension Service of the University of Delaware. These surveys, of which this is the third, are used as a basis for a five year extension program in the area covered. They have been made only upon request of the community concerned, which assures interest and hearty co-operation in the follow up program from most of the farmers whose records are taken.

A similar survey was made in this same area in 1914, which will afford a means of comparison of agricultural changes and conditions as brought about following the war period, in a section where wheat is the principal crop grown.

Research relating to the marketing of cattle from Southwest Virginia is being conducted co-operatively by Virginia Polytechnic Institute and Federal investigators. It is hoped that the most acceptable market types may be identified with the most profitable production and that the causes of "black meat" may be determined.

Another co-operative research project relates to the study of the market demands of Roanoke, Virginia, in comparison with the local supply of agricultural produce. The purpose is to provide information for more intelligently determining the needs of agricultural production.

The Coan River Tomato Association, of Heathsville, Virginia, ended its season with several thousand dollars surplus after having paid prices to its members which were higher than prices received by non-members. A patronage dividend will also be distributed to the members. This association was assisted materially by the Extension Division of the

Virginia Polytechnic Institute where its organization plans were prepared. This association frequently called upon the marketing specialist of V. P. I. for advice which was freely given.

Mr. James H. Shaffer, assistant in Farm Economics, West Virginia University, resigned September 15, to accept a position in the city schools of Grafton, West Virginia.

Mr. W. W. Armentrout assistant in Marketing, has been granted leave of absence. He will spend the year in the University of Wisconsin as a graduate student.

The Department of Agricultural Economics, North Carolina, has just published a laboratory manual containing 38 exercises in Agricultural Economics. This manual is available for distribution. A bulletin which is now in preparation, entitled "The Economic Foundations for an Agricultural Program," will set forth in charts and maps, the physical and economic factors of the state and show their relation to similar factors of the nation as a whole. The fundamental idea is to definitely place the agriculture of the State. This work is being carried on in co-operation with the Division of Land Economics.

This Department of Agricultural Economics is also working in conjunction with the Tobacco Co-operative Association in establishing the Division of Statistical Research. Mr. W. H. Overall, graduate student in the Department of Agricultural Economics, has been appointed as statistician. He will continue his graduate work and direct the statistical research for the Co-operative Association.

A graduate department has been established at the North Carolina State College this year. Ten graduate scholarships, ten graduate fellowships, and ten teaching fellowships have been offered. It is anticipated that a considerable number of graduate students will take advanced work offered at the College. The scholarships and fellowships have been filled for this year. Students wishing to avail themselves of the opportunities for another year should apply to the Dean of the Graduate School for application blanks.

During 1924 a study has been made of approximately 200 farms in South Carolina, which were also analyzed in 1923. This work is in Anderson County, a typical cotton section of the Piedmont of South Carolina. The farms included in this year's survey are the identical ones that were included in a similar study last year.

Another study conducted in 1924 is a survey in Greenville, Spartanburg and Cherokee counties. Business analyses as well as cost of production determinations are being carried on in this area as in the Anderson area.

A consumption and production survey is being made for the Macon, Ga., trade territory. This area embraces about 12 counties. The survey is being conducted jointly by the U. S. Bureau of Agricultural Economics, the Georgia State College of Agriculture, and the Macon Chamber of Commerce. Mr. H. T. Crosby and Mr. Bruce McKinney are assisting from the Washington office.

Dr. John R. Fain, Head of the Division of Agronomy, is on a year's leave of absence and Mr. E. C. Westbrook, Farm Management Specialist, will teach his courses in Agricultural Economics. Mr. Kenneth Treanor has been put on as Farm Management Specialist. Mr. Treanor who is one of last year's graduates from the Georgia State College of Agriculture has had several months experience with the U. S. Bureau of Crop Estimates.

Under the direction of Professor C. E. Allred, of the University of Tennessee, Mr. W. S. Woodward is now engaged in making a study of the relation between economic conditions and educational progress in different sections of Tennessee.

Mr. B. B. Bird, fellow in Agricultural Economics at the University of Tennessee, will continue the cost of production studies which have now been in progress for two years.

The Southern Association of Economists and Sociologists will be prominently associated with the next annual meeting of the Southern Association of Agricultural Workers, which meets in Atlanta, Georgia, in January. The econom-

ists are to put on a half day's program before the general meeting of Agricultural Workers, and then will have a sectional meeting covering one day. Professor S. H. Hobbs of University of North Carolina is President of the Economists, and Professor C. E. Allred of University of Tennessee is Secretary.

Mr. C. W. Hammans has been added to the Extension force of the Department of Rural Economics, at the Ohio State University, to work in the field of marketing.

Mr. George Henning, formerly a County Agent in Mercer County, has been appointed as Assistant in the Rural Economics Department at Ohio State University. He will take graduate work in marketing and at the same time develop a file of information relating to co-operating enterprises in Ohio.

Mr. E. J. Utz, who was employed temporarily as Assistant Farm Management Demonstrator during the absence of Mr. Taber in Ohio, has been permanently employed. There are now three Farm Management Demonstrators in the State.

Dr. C. L. Stewart who received his Ph. D. degree at Illinois in 1916, and who more recently has been associated with Dr. L. C. Gray in the Land Economics Division of U. S. D. A., has returned to the University of Illinois to take charge of the Agricultural Economics work. Dr. L. J. Norton who received his Ph. D. from Cornell University and Dr. Paul Eke, Ph. D., University of Wisconsin, 1923, will be associated with Dr. Stewart.

Mr. Orion Ulrey, B. S., University of Illinois, 1923, and Mr. K. T. Wright, B. S., University of Illinois 1924, have accepted appointments in farm management work and will take part time graduate work.

Mr. Emil Rauchenstein, Assistant Professor in Farm Organization and Management at the University of Illinois, resigned in order to take up graduate study at the University of Minnesota. Mr. Rauchenstein will take graduate work in both Farm Management and Agricultural Economics.

Mr. D. C. Wood, formerly Farm Management Specialist in Missouri and Assistant Professor of Farm Management at

Montana, and more recently a member of the Doane Consulting Service at St. Louis has assumed his duties as Farm Management Specialist at the College in Columbia, Missouri. He began work about August 20th.

Mr. True D. Morse, who for several years has been an Extension Specialist in livestock marketing working with cooperative shipping associations, has been appointed Extension Specialist in Agricultural Economics and began his duties about June 1st. Mr. Morse will give some time to marketing and considerable time to general Agricultural Economics questions. He will also continue his graduate work at Missouri University.

The Agricultural Economics and Rural Sociology Department of Iowa State College is this year introducing a new course in agricultural business with special emphasis on agricultural marketing.

The freshman year of this course is the same as taken by all agricultural students. The last three years provide for sixty-four hours of work in agricultural economics, rural sociology, general economics, statistics, transportation, and accounting. It is also possible in the last three years for students to take a large amount of technical work along lines of greatest interest.

The Agricultural Economics and Rural Sociology Department of Iowa State College includes the following: Thomas Baird, graduate of the University of Kentucky; E. S. Clark, Beloit College; C. L. Pickard, formerly county agent of Humboldt County; and D. A. B. Fitzgerald, graduate of the College of Agriculture, Saskatoon, Saskatchewan.

Mr. Hugh Campbell Frame has joined the Agricultural Economics Department of Iowa State College as Assistant Professor and will teach transportation and business law.

The new instructors on the staff of the Division of Agricultural Economics, University of Minnesota, are: Mr. Percy I. Lowe, Mr. Charles B. Howe, and Mr. Buford M. Gile. The new research assistants are: Thomas G. Stitts, Hutzel Metzger, L. I. Myers, Roy Ballinger, Conrad Hammer, Emil Rauchenstein, and Andrew Cairns.

Of last year's staff, Mr. Edmund B. Daggit and Mr. Ernst H. Wiecking are with the United States Bureau of Agricultural Economics, and Mr. C. F. Clayton has gone to the University of Arkansas.

The research program for next year will include two projects in market price, two in production economics, one in land economics, one in rural credit, one in taxation, and several in marketing.

The Division is offering a new course next year, called "Market Price," which takes up the concrete aspects of price determination in the actual market place. The course is being given by Dr. Warren C. Waite.

Preliminary estimates made by the Department of Farm Management of the North Dakota Agricultural College on the cost of producing wheat, rye and flax in North Dakota, indicate that for the first time in four years the agricultural producers of the State are in a fair way to make a profit on their cash crops. On a basis of local prices in comparison to the estimates of cost, wheat shows a profit of approximately $6.02 per acre, rye $1.74, and flax, $6.49. Applying these approximate rates of profit, the 77,000 farmers of the State should, on the average, make a profit of from fifty million to sixty million dollars on these crops. This will amount to an average of slightly more than $700 per farm. The peculiar climatic conditions that were unfavorable to our neighbors to the north evidently worked to the benefit of American producers and the short crop in other countries also contributed.

This condition of affairs assists materially in relieving the pressure. While this income will not by any means clear up the entire indebtedness, it is sufficiently encouraging to note that it will relieve a lot of the current short time obligations and take care of large quantities of back taxes.

Many farmers who have changed their views with regard to wheat producing alone during the last few years will not permit the success of this year to change their plans for gradually increasing their diversity of production. The

lesson of the last four years has been a severe one and will not be forgotten quickly.

Mr. R. H. Rogers has been added to the staff at South Dakota Agricultural College as Farm Management Demonstrator. Mr. Rogers took his B. S. and M. S. degrees at Purdue University and has done instructional work on the staff at Purdue before coming here.

A study of Tax and Credit problems is to be started in co-operation with the Bureau of Agricultural Economics, beginning next month under direction of Mr. Nils A. Olsen of the division of Agricultural Finance.

Harold Hedges, a graduate of the University of Nebraska, assumed his duties as Instructor in Marketing in the Department of Agricultural Economics of the Kansas State Agricultural College, July 15, 1924. He will devote his time to livestock marketing investigations and to teaching certain of the courses in marketing offered by the college.

The Department of Agricultural Economics of the Kansas State Agricultural College is co-operating with other agencies within the State in issuing a monthly review of the markets entitled "The Agricultural Situation as it Affects Kansas." The first number was issued in June and it has appeared regularly each month since then. It is being distributed to farmers, county agents, high school instructors in agriculture, and the press of the State. It has met with a very favorable reception.

The annual Farm Congress was held at the Oklahoma Agricultural and Mechanical College, Stillwater, Oklahoma, August 19th to 23d inclusive. Between 4,000 and 5,000 people attended this convention, including more than 2,000 boys and girls representing the boys and girls clubs of the State.

REPORT OF COMMITTEE ON TERMINOLOGY

A concept is needed to fulfill some of the functions for which the term "farm income" is employed, that is, to measure the success of the farm as a whole as distinguished from that of the operator or other persons associated with the business. The term farm income is subject to a number of defects, as follows:

1. It has been employed for the farm as a whole and for the operator of the farm, and differently calculated in each case, particularly for operators of different tenure classes. This has involved confusion in the analysis as between the point of view of the operator and that of the farm as a whole.

2. As a result, receipts and expenses have been differently defined for different classes of tenure, and consequently are not on a uniform basis for purposes of comparison. For instance, share rents are deducted from receipts, but cash rents are included in expenses.

3. Generally, the contribution of the farm to the family living has not been included in receipts.

4. Generally, the value of food and other perquisites furnished hired laborers has not been included in receipts.

5. The farm has not been charged with the value of the physical labor of the operator himself, that is, the labor that would need to be hired if not performed by the operator.

6. Frequently receipts from labor off the farm or from other sources have been included. This may be justified where the labor is incidental and casual, but not where it is a major part of receipts.

7. Frequently woodlot products have not been included in receipts though an important item in the farm economy.

8. As a result of some of the above difficulties, farm income does not fulfill the function of measuring a net result of the farm business as a whole which may be taken as a point of departure for distribution among the various persons connected with the business or between the various functions involved.

In consequence of these limitations and because of the recognized difficulty of modifying an old and long established term the committee ventured to suggest a new concept which they have designated, "net value product." This is arrived at as follows:

1. *Gross Value Product of the Farm.*
   a. Value of all livestock products of the year.
   b. Increase in value of all livestock sold, from beginning of fiscal year to time of sale.
   c. Increase in value, not due to changes in price, of all livestock not sold.
   d. Value of crops produced and not used for seed or feed (including wood-lot products).
   e. That part of the value of farm improvements attributable to labor or materials obtained from the farm.

   (Above items include the value of farm products used by the farm family or by hired laborers as part of wages. Do not include receipts from labor performed off the farm or from equipment used off the farm.)

2. *Net Value Product.*

   Gross value product less the following deductions:
   a. Seed, feed, and fertilizer not produced on farm during current year.
   b. Other supplies used.
   c. Current expenses, such as blacksmith bill, freight, machine rentals, etc. (Does not include taxes or interest.)
   d. Depreciation on machinery or buildings employed for productive purposes, and durable supplies on hand. (Does not include machinery used off the farm.)
   e. Value of all hired labor, family labor, and operator's labor, employed in the production of any of the items included in gross value product of the farm. (Does not include labor used off the farm.) (The rental of residence is not included in gross value product, and expenses on account of residence are not deducted from gross value product. However, the value of residence used by hired laborers is included in wages of labor.)

By simple modifications of net value product, it is possible to develop certain other useful concepts.

3. *Operator's Net Return.*

   Deducting from net value product interest on indebtedness of operator, rent paid to landlord, and farm prop-

erty taxes, leaves operator's net return. This represents the return to the operator for his capital and the trouble of looking after it (not including his physical labor).

4. *Operator's Income from the Farm Business.*
   Adding to operator's net return the value of his labor (previously deducted from gross value product) gives operator's income from the farm business. This is the income from the farm business which rewards the operator's investment and his labor.

5. *Family Income from the Farm Business.*
   Adding to operator's net return the wages of unpaid family labor gives family income from the farm business. This is the total income earned by the farm family considered as a unit from the employment of its capital and labor in the farm business. It is the income disposable for maintenance of standard of living for accumulation.

The committee recognize that a useful distinction is involved in the terms "cash costs" and "non-cash costs," and suggest the following definition:

Cash costs: All costs that take the form of a money payment or a contract to pay money or its equivalent.

Non-cash costs are all other costs.

The committee recognize the lack of precision that is prevalent in the use of the term "land values." Both in popular and in scientific writing it is employed to designate the exchange value of land measured in money, whether of constant or of changing purchasing power. The problem is not solved by strict adherence to the conventional definition of "price" as value expressed in terms of a standard of value, for the value of land is expressed in money no less when the latter is conceived as of constant purchasing power than when of variable purchasing power. It seems possible that the following distinction may be found convenient.

Land values: Value of land expressed in a monetary unit of constant purchasing power.

Land prices: Value of land expressed in a monetary unit of current purchasing power.

COMMITTEE,

L. C. GRAY, *Chairman.*

TENTATIVE PROGRAM OF FIFTEENTH ANNUAL MEETING OF AMERICAN FARM ECONOMIC ASSOCIATION

DECEMBER 29-31, 1924

Auditorium, Hotel, Chicago, Ill.

GENERAL TOPIC—AN AMERICAN AGRICULTURAL POLICY

Monday, December 29

9.00 A. M. Business Meeting.
9.30 A. M. The Outlines of a Policy.
The Economic Approach to a National Agricultural Policy.
E. G. Nourse, President, American Farm Economic Association.
The Platform of Organized Agriculture.
Geo. A. Fox, Secretary, Illinois Agricultural Association.
A Business Man's View of Agriculture.
A. W. Douglas, Simmons Hardware Company.
Discussion.
H. W. Moorhouse, Research Department, American Farm Bureau Federation.
12.30 P. M. Joint Luncheon with Rural Sociologists.
Topic—Rural Incomes and Standards of Living.
Dwight L. Sanderson, Cornell University.
M. L. Wilson, Bureau of Agricultural Economics, U. S. D. A.
Discussion.
Dr. Kneeland, Bureau of Home Economics, U. S. D. A.
2.00 P. M. No Session.
8.00 P. M. Monetary and Banking Elements in an Agricultural Policy.
Did Deflation Ruin the Farmer and Would Inflation Save Him?
Geo. W. Dowrie, University of Minnesota.
Has Rural Credit Legislation Gone Far Enough and in the Right Direction?
C. L. Benner, Institute of Economics.
Discussion.
F. A. Pearson, Cornell University.
Fred L. Garlock, Iowa State College.

Tuesday, December 30

9.00 A. M. External Adjustments of Our Agricultural Industry.
Immigration and the Welfare of Agriculture.
Alexander E. Cance, Massachusetts Agricultural College.
The Farmers' Real Interest in Tariff Legislation.
Jacob Viner, University of Chicago.
Live Stock Products and the Tariff.
E. N. Wentworth, Armour and Company.
12.30 P. M. Buffet Luncheon of all Associations.
2.00 P. M. The Tariff Problem, Continued.
As to Wheat.
B. W. Snow, Bartlett Frazier Company.
As to Wool.
J. Byron Wilson, Wyoming Wool Growers.
Dairy Products and Vegetable Oils.
B. H. Hibbard, University of Wisconsin.

7.00 P. M. Internal Adjustments of our Agricultural Industry.
The Part Which Public Agencies Can Play.
John D. Black, University of Minnesota.
What Cooperative Organizations Can Accomplish.
O. B. Jesness, University of Kentucky.
Discussion.
W. F. Callander, Bureau of Agricultural Economics, U. S. D. A.
P. L. Miller, Iowa State College.

Wednesday, December 31

9.00 A. M. Internal Adjustments, Continued.
The Wheat Grower's Problem of Readjustment.
W. E. Grimes, Kansas Agricultural College.
The Corn Belt Problem.
C. L. Holmes, Iowa State College.
The Northeast and the Dairy Industry.
E. G. Misner, Cornell University.
Discussion.
Rex Willard, University of North Dakota.
O. R. Johnson, University of Missouri.
Andrew Boss, University of Minnesota.
12.30 P. M. Farm Economics Luncheon.
Topic—Foreign Outposts of the Bureau of Agricultural Economics.
Henry C. Taylor, United States Department of Agriculture.
2.00 P. M. Land Economics and Our Agricultural Policy.
Land Policy as Part of an Agricultural Program.
Geo. S. Wehrwein, University of Wisconsin.
The Place of Taxation in a Constructive Policy.
Eric Englund, Kansas Agricultural College.
Discussion.
6.00 P. M. Group Dinners and Round Table Discussions.
State Agricultural Programs, G. W. Forster, North Carolina Agr. College, Presiding.
Marketing Group, J. T. Horner, Michigan Agricultural College, Presiding.
Extension Methods and Programs, S. H. Thompson, Iowa State College, Presiding.
Tariff Problems Group, H. C. Filley, University of Nebraska, Presiding.
Others by request.